May 1988 £1.25

AMSTRAD Computer User



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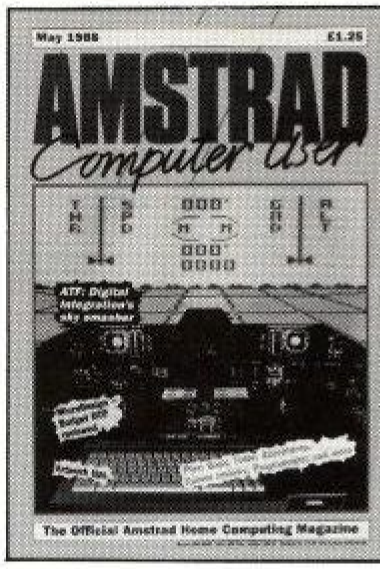

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CHAMPIONS
ALL THESE CHART TOPPING HITS
RENEGADE
IK+
RAMPAGE
BARBARIAN
The Ultimate Warrior
SUPER SPRINT
RENEGADE
In the knife-edge world of the vigilante there is no place to rest, no time to think – but look sharp – there is always time to die! You will encounter the disciples of evil who's mission it is to exterminate the only man on earth who dares to throw down the guantlet in their path – the Renegade.
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IK+
They called International Karate "the greatest Karate beat 'em up yet" (Commodore User). And who are we to argue? But ARCHER MACLEAN has come up with a stunner. A third fighter. An amazing animated background. New moves (including double head-kick and a spectacular backflip). Re-mixed music by ROB HUBBARD. And balls!
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SUPER SPRINT
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RAMPAGE
The game where the nice guys don't get a look in.
Grab your way through Chicago, punch up New York and jump on San Francisco. Three indescribably nasty characters which bear a remarkable likeness to King Kong, Godzilla and Wolf-man, need you to send them on a rampage in an enduring 150 days of destruction, through 50 different cities.
BARBARIAN
THE STORY SO FAR...
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AMSTRAD Computer User

The official magazine for all users of Amstrad computers

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May 1988



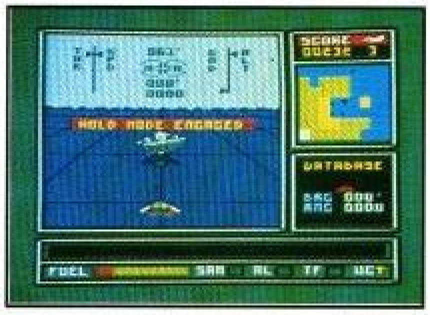
REGULARS

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FEATURES



REVIEWS



Editorial and Advertising offices:
169 King's Road, Brentwood, Essex CM14 4EF.

Tel: 0277-234459 (Editorial); 0277 234434 (Advertising)
Telecom Gold: 72:MAG021

Published by Avralite Ltd, Adlington Park, Adlington, Macclesfield SK10 4NP.

News trade distribution: Diamond-Europress Sales & Distribution Ltd, Unit 1, Burgess Road, Ivyhouse lane, Hastings, East Sussex TN35 4NR.
Tel: 0424 430422.

Editor: Simon Rockman
Assistant: Elaine Rawlins
Advertisement Manager: Julian Harriott
Advertisement Sales: Virginia Cheke

ABC
63,599
Jan-June 1987

Cover photography by: Martin Howett

Link your Amstrad CPC to the outside world with...

MicroLink

Electronic mail – The cheapest and fastest form of communication possible. It costs the same to send a message to one mailbox as to 500!

Telex – Link up with 96,000 telex subscribers in the UK and 1.5 million worldwide. You can even send and receive telexes after office hours or while travelling.

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Company Obtain facts about any British limited company in seconds, and fully analysed financial information on over 100,000 companies.

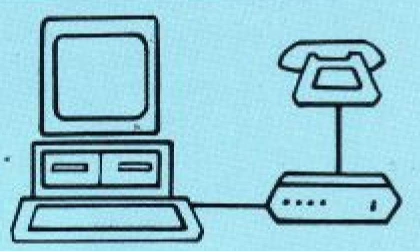
Translation – Access the biggest and most up-to-date multi-lingual dictionary in the world, with over 380,000 words.

News – Use the powerful search commands to pinpoint vital business information from the world's leading news services, newspapers and periodicals.

Radiopaging – If you also have a pocket radiopager you'll be alerted each time an urgent message arrives in your mailbox. So you're always in touch.

Gateways – Get through to New York in just five seconds – or key into the EEC computer in Luxembourg, which links you to 600 databases throughout Europe.

When you join MicroLink you've got the whole business world at your fingertips – 24 hours a day. You'll have immediate access to ALL the facilities offered by Telecom Gold ... and a great deal more besides.

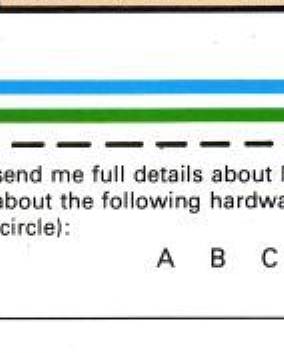


	Typical comms packages
A	*Cirkit: Acoustic V23 modem + RS232 interface + tape or disc comms software (£35.40)*
B	*KDS: Minimax V21, V23 autodial modem + RS232 interface + comms rom (£99)*
C	*Pace: Nightingale V21, V23 manual dial modem + RS232 interface + Commstar rom (£159)*
D	*Pace: Linnet V21, V23 autodial modem + RS232 interface + Commstar rom (£213)*

All you need – apart from your Amstrad – is a modem, which plugs into your telephone wall socket, an RS232 interface and suitable communications software.

We have provided a list of possible combinations (left), ranging from the very cheapest to ones which can automatically dial the MicroLink telephone number and connect you directly to the service – all you have to do is type in your personal security password.

Whichever equipment you use, you will be able to call MicroLink, open your mailbox, save to disc any messages waiting for you, and disconnect in as little as two minutes.



More than 90 per cent of subscribers can connect to the MicroLink computer at local call rates.

TO FIND OUT MORE
Fill in the coupon and send it to the address below. You will receive full details of services and costs, together with an application form. Complete this and within days you and your Amstrad will be able to use all the services of MicroLink and Telecom Gold.

Please send me full details about MicroLink, and information sheets about the following hardware and software options (please circle):

A B C D

Name________________

Address________________

____

Postcode________________

Send to: Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

ACU5

NEWS Computer User

Amstrad shares rally

AMSTRAD's profits for the six months to December 31 1987 were £90.1 million. This beat the most optimistic City expectations of £85 million and triggered a rally in the share price.

In his report Alan Sugar talked about the success of home and business computers, which were hindered by the lack of availability.

He spoke well of Amstrad France and promised rapid expansion from Amstrad Italy and Amstrad Spain.

The report took a more cautious view of the USA, which Amstrad plans to penetrate "mistake free".

New divisions of Amstrad will be set up in Germany (as predicted in November's *ACU*), Belgium, Holland and Australia.

The report failed to shed any light on what new products might be in the pipeline. Popular rumours include the possibility of a cheap fax machine and a video camera.



Cybernoid arrives

HEWSON's latest is also Hewson's greatest. A new game from Raffaele Cecco, famed for producing Exolon and Equinox, is every bit as pretty and playable as the games which sired it.

Cybernoid puts you at the controls of a spaceship which can call one of five weapons to its defence – Exolon-style bombs, mines for aliens to run into, bouncing bombs which wreak havoc all over the screen, homing missiles which seek and destroy alien emplacements, and shields which protect you from all hazards.

You can pick up a rearward facing gun and swinging missile. The game had the editor hooked instantly. Look out for a review soon. It is available on tape for £9.95 and disc for £14.95.

Blowing your mind

Delta 4 is the software house responsible for things like Bored of the Rings and several other off-beat adventures. The serious side to Delta 4 is Abstract Concepts whose first release is Mindfighter.

The game features Robin, an 11-year-old boy with exceptional psychic powers.

As a student of parapsychology he is capable of putting himself into a trance. This state leads him to wake up in a post-nuclear holocaust world. From this position he has to help survivors re-build their lives.



Soon he realises that evil forces are at work. A fascist system is exploiting the survivors. Robin realises that the best way to help them is to return to the present and prevent the war.

You take the role of Robin in the text and graphics adventure.

It is a game in which the personalities of the computer-generated characters matter, so every game should be slightly different.

Every effort has been made to put the story before the effort of playing an adventure.

Mindfighter is based on a book by Anna Popkess and has been programmed by Delta 4's Fergus McNeill with help from Anna Popkess. It will be published by Activision.

● *Pictured left are Fergus McNeill and Anna Popkess, who don't know about not putting muddy shoes on seats.*

Cheaper colour

THE new LC-10 printer from Star Micronics is one of the cheapest colour printers available, and probably the cheapest dot matrix.

Based on the successful Star NL-10, the new printer costs under £300 including VAT.

It has a high quality nine pin head and a quoted speed of 144 characters per second (CPS) draft or 36 CPS in near letter quality.

The LC-10 can be used to produce black and white printouts with a normal ribbon. There are eight typestyles and six sizes – all selectable from the front panel.

Continuous and single sheet stationery can be used, the latter inserted without having to remove the continuous paper.

An optional cut sheet feeder costs £65.



Star Micronics' LC-10 colour for under £300

Infoscript for 6128

BRUNNING Software has announced Infoscript for the CPC 6128. They say it's a fast and friendly relational database, with word processor and spelling checker.

The speed comes from the software being memory resident. It uses the second bank of 6128 memory and will take advantage of any extra memory provided by fitting a DK'Tronics ram pack. The spelling checker can be loaded with the program.

The relation database permits father, son and daughter records, which allow the daughter to take a new relational name, but not the son.

A wide range of markers controls complex merging of data from the database to the word processor.

The database and word processor capabilities can be used to produce standard letters and sticky labels. The program costs £46, but is available as an upgrade for Brunword users for £22.

For more details contact Brunning Software on 0245 252854.

Virus spreads

CONFESSION time. Most of you spotted that the A5 story in our last issue was an April Fool spoof. However, the majority of readers seemed to be caught out by the second April Fool, the virus story here in the news.

The program, Des B Lief and the Computer Retailers and Allied Professionals Association (spot the acronym) are all figments of fun.

Writing to rom and reformatted ram and the need for a new chip are equally daft.

Some people who should have known better fell for the story – including at least one rival magazine.

More or less

ARNOR is to launch Maxam 1.5, something which is better than Maxam, but not as expensive as Maxam II.

Maxam 1.5 will be rom-based and offer enhanced monitor and breakpoint facilities, but it will not have an editor.

It is expected that users of Maxam 1.5 will have a copy of Protext, and will use the new Maxam command from inside Protext.

The new assembler will cost £29.95. For more details call Arnor on 0733 239011.

CP/M on rom

GRADUATE Software has taken the dreaded disc operating system CP/M and is offering it on rom. This makes it faster and easier to use, particularly if you only have a single drive machine.

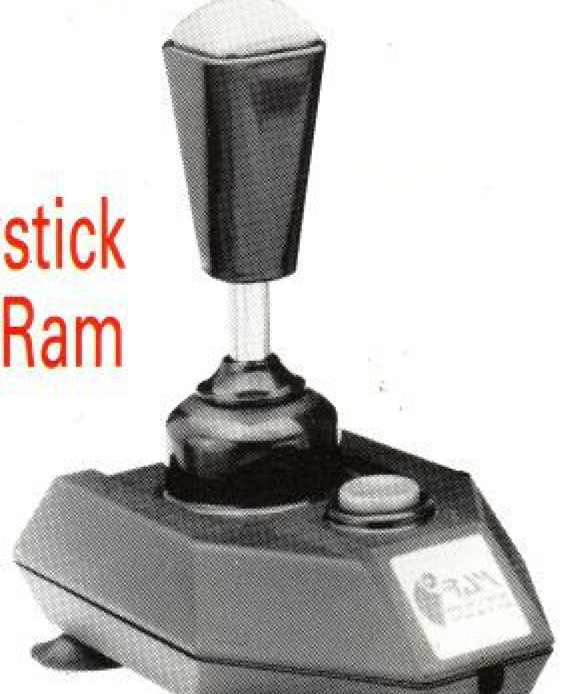
So as not to infringe Amstrad or Digital Research's copyright you will have to send your original CP/M disc to the company so that it can be copied on to the rom, or to be more precise, roms, since the Graduate system uses two 16k eproms. The cost is £24.95.

The commands include a number of useful Amsdos RSXs as well as most of the commonly used CP/M programs.

Some observers have expressed concern about the legality of copying software in this way.

For more details contact Graduate Software on 0272 656659.

Joystick for Ram



THE wide range of joysticks available now includes the Ram Delta. This claims to have the accurate action and the features of more expensive joysticks for £9.99. The Delta has a two year guarantee which means Ram has great faith in the durability of the six microswitches. More details from Ram on 0252 850085.

Our first visit to the fabulous Great Hall at Alexandra Palace was an OUTSTANDING success.

AMSTRAD COMPUTER SHOW

So for our May show there'll be . . .

- ★ **More stands** (lots more to try and buy)
- ★ **More space** (a much bigger floor area)
- ★ **More savings** (special offers galore)

THURSDAY	FRIDAY	SATURDAY
MAY 26	MAY 27	MAY 28
10am-6pm	10am-6pm	10am-6pm



1968 AMSTRAD 1988 20 YEARS ANNIVERSARY

Help celebrate Amstrad's 20th anniversary at the 10th Amstrad Computer Show – the biggest event of its kind ever held. This is the show where both beginners and experienced users can find the answers to all their questions. A **Computerised Product Locator** will give visitors an instant guide to which stands have products they want to see. An **Expert Advice Centre** will be staffed by some of Britain's top computer professionals. And **Demonstration Areas** will enable you to see the very latest software in action.

A great day out for all the family!

The NEW Alexandra Palace is at the heart of a vast leisure complex, with a magnificent panoramic view over the capital. While you're at the show the rest of the family can enjoy the wooded park, the boating lake, the children's play centre and zoo, and the park's own garden centre. And new facilities completed since the last show include a large, fully-licenced restaurant, bars and snack areas, and the tropical Palm Court leisure area with its exotic trees and fountains. There's extensive car parking too – and all of it is free.

Advance ticket order

Please supply:

☐ Adult tickets at £2 (save £1) .... £.........

☐ Under-16s tickets at £1 (save £1) .... £.........

Total £______

☐ Cheque enclosed made payable to Database Publications Ltd.

☐ Please debit my credit card account

☐ Access
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The Great Hall, Alexandra Palace, Alexandra Park, Wood Green, London N22. May 26-28

Admission at door: £3 (adults), £2 (under 16s)

Post to: *Amstrad Show Tickets, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.*

Advance ticket orders must be received by Wednesday, May 11, 1988

Name..

Address...

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MICROLINK ORDERS: MAILBOX 72:MAG001

Please quote credit card number and full address

A375

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MASTERFILE III

FOR THE AMSTRAD CPC 6128 (ALSO CPC 464/664 WITH DK 'TRONICS 64K RAM)

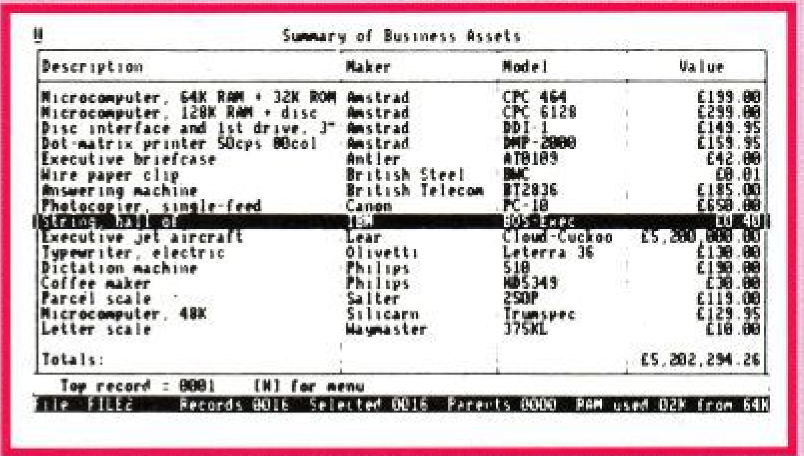
FIRMLY ESTABLISHED ...

MASTERFILE III is now firmly established as THE filing system for the CPC6128. It has received rapturous reviews and we could paper the walls of our new offices with our customers' letters of appreciation.

For the benefit of newcomers to the CPC machines: MASTERFILE III is a powerful and flexible data filing and retrieval system. All "database" systems require that your data is organised into fields and records. Unlike most, MASTERFILE does not commit you to field lengths or formats, since ALL data is variable-length and optional. Files are not pre-formatted, and only used bytes are saved to disc. Also, unlike the rest, MASTERFILE allows multiple user-defined ways of viewing/printing your data. And unique in its price range, MASTERFILE offers RELATIONAL FILE options, whereby common data can be entered just once and shared by many records. Maximum field size is 240, maximum fields per record is over 50, and maximum file size is 64K. Room for 1,000 full names and addresses, for example. Only one disc drive is required. It is menu-driven throughout, and comes with detailed illustrated manual, and example files.

SO VERY VERSATILE ...

Just about ANY kind of information can be handled by MASTERFILE. You can EXPORT the data to other systems (e.g. PROTEXT/MERGE and TASWORD). You can even merge your own USER BASIC to MASTERFILE for customised file processing, or build new files from other computer sources. The speed of SEARCH of MASTERFILE is second to none. Records can be sorted ascending/descending, character or signed numeric, even embedded keys such as surnames. Other functions are field-to-field calculations, and several-across label printing. We simply don't have room to list all the features; give us a call if you are still in doubt of the power of MASTERFILE III.



Summary of Business Assets

Description	Maker	Model	Value
Microcomputer, 64K RAM + 32K ROM	Amstrad	CPC 464	£199.00
Microcomputer, 128K RAM + disc	Amstrad	CPC 6128	£299.00
Disc interface and 1st drive, 3"	Amstrad	DDI-1	£149.95
Dot-matrix printer 50cps 80col	Amstrad	DMP-2000	£159.95
Executive briefcase	Antler	AT0109	£42.00
Wire paper clip	British Steel	BWC	£0.01
Answering machine	British Telecom	BT2836	£185.00
Photocopier, single-feed	Canon	PC-10	£650.00
String, ball of	[illegible]	[illegible]	[illegible]
Executive jet aircraft	Lear	Cloud-Cuckoo	£5,200,000.00
Typewriter, electric	Olivetti	Leterra 36	£130.00
Dictation machine	Philips	510	£190.00
Coffee maker	Philips	HD5349	£30.00
Parcel scale	Salter	250P	£119.00
Microcomputer, 48K	Silicarn	Trumspec	£129.95
Letter scale	Waymaster	375KL	£10.00
Totals:			£5,202,294.26

Top record : 0001 [H] for menu

File FILE2 Records 0016 Selected 0016 Parents 0000 RAM used 02K from 64K

ALL THIS POWER ...

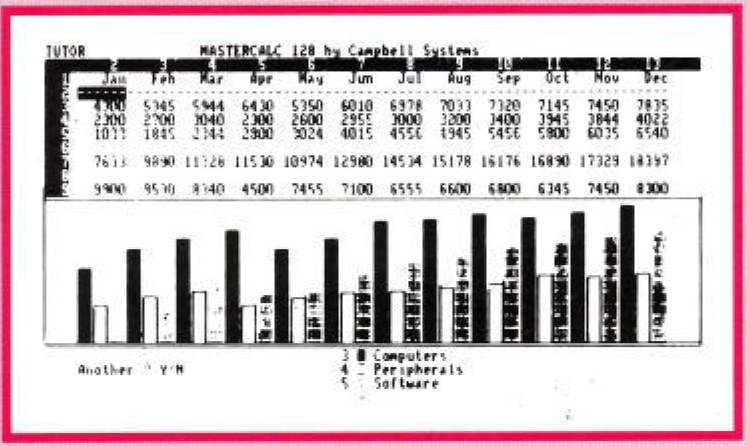
This is no toy thrown together in BASIC and half-tested, but real machine-coded computing power professionally constructed. We have had IBM and Apricot users beg us for a MASTERFILE for their machines — when they had seen the earlier CPC MASTERFILE. All this power is yours for ... £39.95.

For those who already have an earlier MASTERFILE, we offer updates; please telephone for details. You will be amazed at the performance improvements and extra functions.

★★★ PCW users: be patient, MASTERFILE 8000 will be ready early in 1987 ★★★

MASTERCALC 128 SPREADSHEET

We also have one of the fastest and friendliest spread-sheet programs around, MASTERCALC 128. Its special features include: individual tailoring of column widths and precision ; relocatable formulae; split-screen option; automatic cursor advance; text output to printer, or to disc for interface with PROTEXT or TASWORD; hi-res graphic histogram of any three rows. MASTERCALC 128 runs on CPC6128, or CPC464/664 with DK'tronics RAM. The price is just £33.00



SPECIAL OFFER

You can save £10 by taking MASTERFILE III and MASTERCALC 128 for a combined price of just £62.95.

Prices include VAT and P&P to anywhere in Europe. Elsewhere please add 20% for air-mail service. ACCESS/VISA/MASTERCARD welcome, written or telephoned, quoting card expiry date. Make cheques payable to "Campbell Systems". Our normal response is return of post, 1st class.

CAMPBELL SYSTEMS Dept. (ACU)
7 Station Road, EPPING, Essex CM16 4HA, England. Tel: (0378) 77762/3.

Amstrad v Commodore in OZ

WITH reference to an article in the August *ACU* the following is the reason that the Amstrad is being out-sold by Commodore in Australia.

The Commodore is advertised, it is sold in four major supermarket chains and the Amstrad is sold in one.

Commodore programs are much cheaper. Over here Mini Office II costs £31. 98. There are times as many Commodore programs. *ACU* arrives later than the Commodore magazines, it is expensive, and too expensive to subscribe to.

The May issue has never arrived.

If the UK software houses were to advertise in the local *ACU* or if you were to come to an arrangement with them to include your magazine with the local one, that might be better.

To get information on problems is almost impossible. With Commodore you only need to ring. The only thing the Amstrad has is a 12 month guarantee (three months for all the others).

I believe this should be brought to the attention of Mr. Sugar.

C.G. Stoner,
Victoria,Australia.

LD: *Up to now Amstrad computers have been sold by AWA in Australia. All support has come from them. Amstrad intends to set up an Australian office and this should improve marketing and support.*

Amstrad cannot do anything about the price of software. Software houses I've spoken to say that Australia is quite a small market and so selling games there is an expensive business. I can't answer for the Australian magazine but will look into the non-arrival of the last May issue.

Printer problems

TAKEN by the lure of £50 saving, I've bought an Amstrad DMP 3160 printer from a nationwide discount store to be used with my CPC 6128 which I bought a week earlier. Unfortunately, the manual and printer lead were not supplied. Please tell me where could I get both of them.

In the CPC 6128 manual I found the customised software in the DMP 2000 printers facilitate dot-graphic operation, together with the printing of complete screen dumps. Apart from the price, what is the difference between them, and can my printer do the same job?

Shella Herman,
Dundee, Scotland

LD: *You can get a printer lead from any good dealer or the User Club (091 5108787). The manual should be available from CPC (0772 555034).*

Tired screen

I HAVE had a CPC 464 for about four years. Along with a disc drive, I have used my Amstrad hard. At least a year ago I developed a sloppy habit of closing down my Amstrad by simply emptying the disc drive, shutting it off and then turning off the rest of the unit by the off-on switch at the side



of the computer. I did not switch off the monitor, and it was only when the screen began to give a much faded presentation that I at last realised what I had done.

Please be assured this is not a complaint – I simply need help.

Would you possibly know where I could buy a new monitor to replace the one which is now faded? The rest of the equipment is superb and serves well.

When the computer warms up, the display becomes a little better, but it is still faint and difficult to read.

I realise that my colour monitor will be less clear than a monochrome one; either would be acceptable as a replacement.

Alex McClure,
Teddington, Middlesex.

LD: *I, too, have a very old machine and the screen is wearing out in the same way. You should always switch off the monitor from the mains to reduce the fire risk. I don't know of anyone who sells the monitors separately.*

Software problems

IN the March edition of your magazine a Mr J. Collier was enraged by a previous letter about disc delay and its implication that you have to be a member of the User Club to get any joy.

I have experienced similar treatment. I bought a 6128 from Dixons complete with a package of software. I had two copies supplied by Dixons, both non-operational due to an error in the software.

Dixons informed me that they were out of stock and returned it to the originator, Amstrad Distribution Ltd, to obtain a replacement.

Four months have now lapsed. I understand that the Dixons store in question rings this Amstrad company twice weekly and has been given false and empty promises.

However, unlike Mr. Collier I am a member of the User Club and as such I ask, I implore the Club and any other members and users that have experienced similar difficulties, to get this company to do something.

The Amstrad name, in my view, is being dragged through the mud by a company not worthy of using the name. However, if nothing is done I will return my CPC 6128 and take to a rival product.

Mark French,
Chippenham, Wilts.

LD: *You would be misguided to buy another computer because the free software with the 6128 does not do the job you want. Look around at some more programs for the Amstrad.*

Older readers

AFTER reading the reports of the *ACU* survey in your November 1987 issue I was amazed to see how many older readers buy *ACU*. I would have expected 17-25 as being the largest age range of readership.

Have you included the Amstrad Professional Computing magazine in with *ACU*? Would that explain why the 26-40+ range was so large?

I have discovered a keypress poke for Thrust II from Firebird. Press Control and H and the game will pause. Press Control and S and all will



Send your letters to:
Lance Davis
Letters Editor
Amstrad Computer User
169 Kings Road, Brentwood
Essex CM14 4EF

resume. This a feature is badly needed. As you tend to lose concentration playing the game after a long time as it takes a lot longer than Thrust I to beat.

In Feud when you have zapped all Leanoric's energy down to past his belt he freezes, enabling you to replenish your energy. Come back and finish him off and get a 100 per cent rating.

Hubert McGettrick,
Raheny, Dublin.

LD: *The gap between 17 and 25 is 8 years, and between 26 and 40 is 14 years. If the age of readers is evenly spread you ought to expect more people the wider the gap.*

Space maniac

I WAS one of the heroic readers who diligently typed into his CPC 664 the mega-listing of Space Mania, which covered seven separate blocks of machine code spread over the June-August 1986 issues of *Amstrad Computer User*.

The checksums all agreed and the program worked to the extent that the different screens appeared and the controls seemed to operate. But I have never been satisfied that it worked as intended, even though on the face of it it had been properly entered. It has become a museum piece in my software collection.

I noticed that the contents of listings 5 and 6 (July 1986 issue) were identical in every respect.

Had someone accidentally printed the same listing twice and left out an intended vital version? No, thought I, they would never do that! And in any case, someone else would have noticed it and got it corrected. Did you slip up?

A.J. Burton,
Bedale, North Yorkshire.

LD: *Yes and no. Yes, the listings are identical, but the loader printed in the June 1986 issue loads the two blocks of code into separate places, so a smart operator would have run the program twice, renaming the file.*

No Eastern promise

I'M writing to inform you of the current situation for the CPC market in Singapore. It's deplorable. The agent appointed to market CPC machines does not have a good PR with computer dealers, thus as a result the dealers refuse to support Amstrad.

Currently the agent prefers to concentrate on the PC machines at the expense of CPC. There is no stock for CPC and potential buyers are being turned away.

Upon being questioned, the reply given was they would only bring in one or two sets when requested. This is ridiculous.

If they, as the agent, are not willing to promote CPC then they should allow other dealers to do it.

Also they are not willing to bring in new software for CPC. Please look into this matter or the future of CPC in Singapore would be jeopardised.

From a concerned user,
Singapore.

Interface conspiracy

SOME while ago we bought two acoustic modems with Cirkit RS232 interfaces, to allow us to network our two Amstrad CPC 464 computers over the internal telephone system.

The equipment worked fine until we up-graded to add a PC 1512 to the system. The RS232 interface of the PC is not compatible with requirements of the Protek unit.

I have tried writing to Protek as mentioned in the data sheet associated with the modem, only to find that they appear to have gone out of business.



The only help that I have managed to get from Cirkit is the suggestion that the Protek made two self-cancelling drawing mistakes in their data sheets. But which two wires are displaced?

I now write to you, almost as a last resort. Please, have any of your staff, reviewers or readers resolved this problem?

G. E. Lewis,
Canterbury, Kent.

LD: *If any readers have the answer I'm sure Mr Lewis would appreciate it. I'll get an interface over to the Hairy Hacker and see if he has any ideas.*

What worries me Mr Lewis is that your notepaper describes you as a specialist TV and IT consultant, so I'd expect you to be able to wield a breakout box and tell me!

Dark and silent

I AM writing to ask for advice, for I have recently purchased a graphics light pen for my CPC 464 and the instruction booklet that I received has not been very helpful.

Please, please can you tell me how to work it. I would like to know if there is a light which should light up at the point of the pen, or if the pen needs a higher memory. Maybe I should have a memory expansion?

I have also received a Speech Synthesiser which I can't get to say anything (it will make sounds but that is all). Please, please, please help me by sending this information.

Louise Agnew,
Wegtownshire, Scotland.

LD: *The end of the pen is not supposed to light up – the light goes from the screen into the pen. You should have some software with it.*

The same goes for the speech synth. You need a tape which will enable it to talk. If this is missing write to the manufacturers. This might be Amstrad at the address in the front of the magazine or Ram on 0252 850085.

Sounds good

IN *ACU* letters last year, Emma Goldman and Jason Anderson reported difficulty in getting all three 6128 sound channels to give equal volume through a stereo set. Could you urge readers who have found an entirely satisfactory solution to this problem to write to you describing their solution? Is Siren Software's Soundblaster (advertised in ACU) a solution?

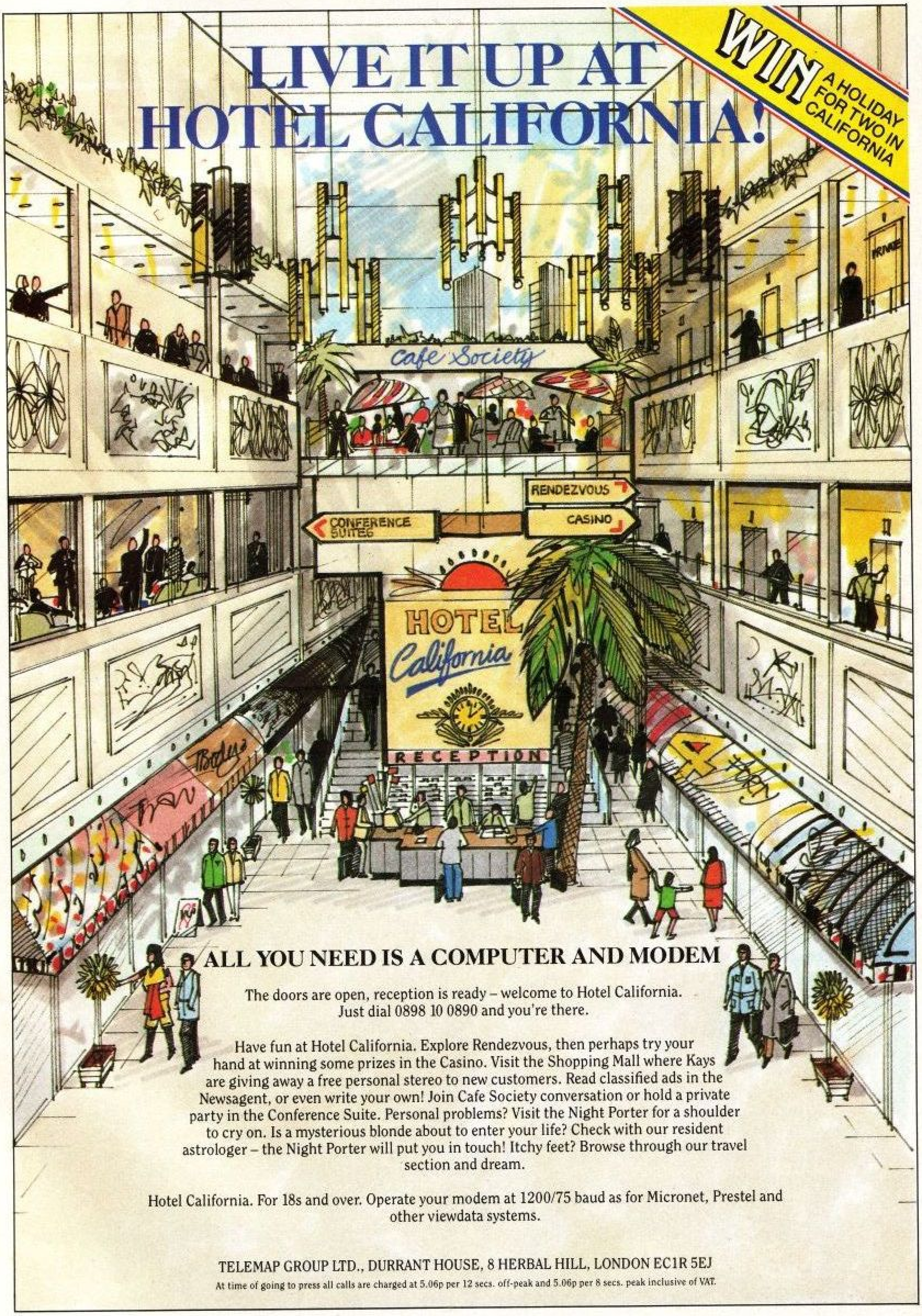
Thanks for Jeff Walker's hard-hitting review of the Pascal Rom (*ACU*, March 1988). What about a survey of the available implementations?

Lately my disc drive on the CPC 6128 has been giving No Disc errors when in fact there was a disc in the drive (especially when I was trying to load Tasword or TMS).

Pressing R to retry usually results in successful loading. Could it be that I need the head cleaner reported in the News section of the March 1988 *ACU*? Or is it more likely to be an alignment problem – or something else?

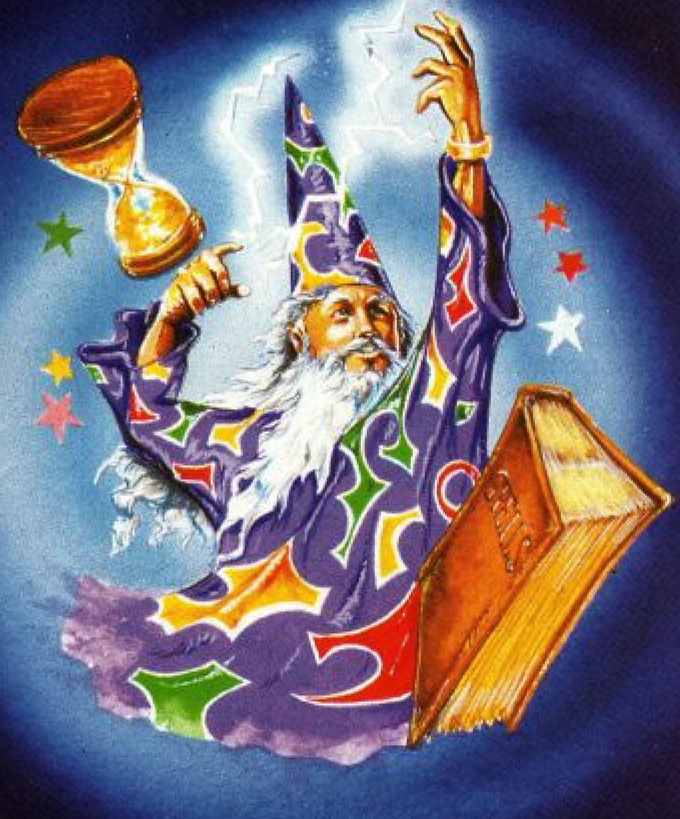
James Brown,
Coleraine, Northern Ireland.

LD: *All the CPC dedicated devices should solve the sound problems. I get disc problems when I type cat before the disc has properly seated; the SBS cleaner would not help this.*

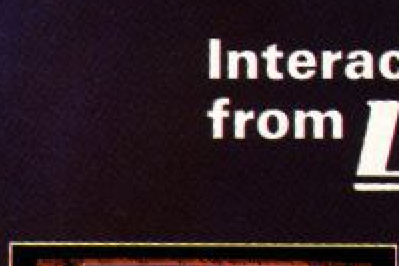

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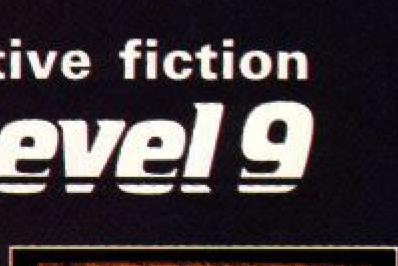
Time and magik

The trilogy



Interactive fiction from Level 9







Screen shots from Atari ST version

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Mr Angry

RE the two females who appeared in the February letters page. First Sue Thomas: Could the reason you don't like zap-zap and pow-pow(!) games be that you just haven't got enough coordination or skill to play them, or am I being a male chauvinist?

I would be happy to supply Sue with a list of intelligent non-zapping games (owt for a local lass).

Or to Karen's little cracker: The last paragraph was spot on and I congratulate her on having the guts to write it. Try the Atari ST Karen (just the job for music) and as most ST users adopt a holier-than-thou attitude I suspect you may get some help with your mormon discs.

I'm glad to hear you like the odd hostile letter because I too think the mag is pretty awful. Hairy Hacker gets on my nerves and poking games is admitting defeat.

The software chart is a waste of space. Who wants to know that thousands have been conned into buying the latest budget trash!

I think Karen has a valid point about some of the articles being a bit too technical. I'm only a beginner and the "straight into the jargon and never mind if they don't understand" article leaves me cold and none the wiser.

And what's the point of Cage Page? Pandering to the rich minority methinks. It's not all bad though; Nigel, Colin and Liz's reviews are good and then there's the letters page, always worth a read.

M. J. Hopewell,
Arnold, Nottingham.

LD: *OK so you admit that you are a chauvinist pig, but you can't expect us to run the magazine just for you.*

The chart is popular, particularly since it is the only one which shows the relative strengths of the products.

No drive

I ORDERED a 3in Hitachi disc drive which I saw advertised at £24.5, the Amstrad connecting cable (£7. 50), carriage (£3), plus VAT and asked Matmos Ltd to despatch these to me if this was all that I needed for a second disc drive.

Well they did, but it wasn't. After reading the instructions and upon further inquiry I was informed that I needed a power supply.

Try as I may I cannot find anyone who has, or who can, get this disc drive to work. I had an electrician connect it to the MP-2, but all it seemed to do was to chew up my discs.

Before trying the MP-2 I wrote to Matmos and explained the great difficulty that I was experiencing trying to find a supplier.

They advised me that it was simply a question of looking around. Have you or any of your readers, found an answer to this problem?

Peter Steers,
Eastbourne, E. Sussex.

LD: *You can't expect to buy the same set-up for £30 that Amstrad sells for £100. The MP-2 should work but you will need someone who understands disc drives to set it up for you.*

Adding depth

I WAS wondering if you could give me some advice concerning 3D isometric games. At the moment I have two such games for my CPC 464 – Head Over Heels and Knightlore (on the Ricochet Budget label).

I was wondering if you could tell me how to print characters behind objects that are in front of them, and in front of objects that are behind them.

I have been having great difficulty achieving this effect and remain baffled as to how the professionals do it.

J. Longley,
Ramsgate, Kent.

LD: *The trick is to use machine code and draw faster than the computer can update the screen. The things which need to go at the back are drawn first and the nearer objects are drawn on top. This happens in the time between each fame being displayed, so you don't see it.*

Applications advice

David Foster takes a back seat as readers reply to problems posed in earlier columns.

THIS month, thanks to BrainStorm Software, I can give the solution to Peter Ceresole's problem with BrainStorm page sizes. At the same time others might find it useful as it makes use of the SID.COM program, which for some reason seems to strike terror into many people.

While it may not be the friendliest program, it is extremely useful for making slight changes to CP/M programs and a lot of programs suggest you use SID to customise them to suit your needs. The values and addresses given are, incidentally, exactly the same on the PCW version, so anyone with a PCW can also make use of the information.

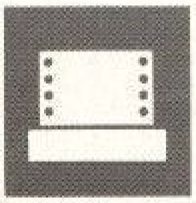
BrainStorm is, described as an 'ideas processor' – an extremely ingenious program that allows you to enter thoughts or ideas and then to rearrange them to suit. You do this by a combination of promoting or demoting their 'standing' and moving them from one place to another.

Among other uses, it is extremely convenient for organising the layout and procedures required in a program before actually writing it, and goes a long way to ensuring that the program is well thought out and designed when you do come to write it.

Thanks are also due to G.Doyle for sending me information regarding Ms Newbury's problem, mentioned in an earlier column, with coming to grips with computers. I have passed on the information. Briefly, Mr Doyle recommends using a spreadsheet (Supercalc2) for accounts and pupil lists and even worksheets, or a good quality word processor for any work that requires the use of varying typestyles.



Dk'Tronics light pen and screen dumps



R.A. Young, writes from the RAF, somewhere overseas from his BFPO number, about a problem he is having trying to produce screen dumps on his printer using the dump program that is listed in the Dk'Tronics manual for the light pen.

Mr Young has fallen into an old trap that has caught many people out over the years. He has an Amstrad DMP2160 printer and the current light pen manual lists two programs for printing screen dumps.

It may well be that earlier versions of the manual only gave a listing for the Amstrad printer. In my manual, one of them is described as being for Epson printers, the other for Amstrad machines. Mr Young has an Amstrad, so not surprisingly, he chose to use the listing for the Amstrad. Wrong!

Many older programs have an option for the "Amstrad printer"! but this refers to the first printer produced by Amstrad, the DMP1, which used a non standard set of printer control codes.

The current range of Amstrad printers, from DMP2000 through to the DMP4000 and LQ3500 are Epson compatible and whenever an Epson option is provided in a program this is the one that should be selected, not one that refers to Amstrad DMP1 or just plain Amstrad.

If Mr Young uses the Epson version of the program, he should find that everything now works as intended.

Choosing a computer



I have received a long and detailed letter from Graham Smith of Kinross asking for advice on what sort of computer to buy. He is a mature student and wants it to help with his studies, both for analysis and for word processing his theses and so on. He also lists future possible uses for the machine.

We would all like to have a computer that would do everything we could possibly want to do in the future, but for a number of reasons, not the least of which is the cost of buying one, I feel that there is a lot to be said for choosing a computer that will suit the present and near future needs and forget about the future.

My reason for saying this is that by the time the future arrives, there will no doubt have been further leaps forward in technology and anything chosen now, with the future in mind, may well be out of date by then.

As Mr Smith says that funds are limited, I would suggest that a CPC6128 will meet his current requirements for word processing, statistics and Basic programming and if he chooses a suitable printer, then at a later date he will be able to get a more powerful computer if the need arises and use the printer with that.

BrainStorm solution and using SID



The famous David Tebbutt, of BrainStorm Software, has come up with the necessary information to enable anyone to reconfigure BrainStorm so that it will print the number of lines required for an A4 page, instead of standard 11 inch continuous stationery, as well as to change print styles and other features.

Address	Default Value	Description
209	02	Number of characters in printer set up sequence (2 default)
20A	0F	Code for condensed printing with an Epson compatible printer(15)
20B	00	Null code required by some printers for condensed printing, in conjunction with 15.
20C-212	00	Spare locations for other printer codes, up to a maximum of 8 in total, from 20A-212.
21B	7D	Length of longest line + 1 (125 chars default)
21C	43	Page length in lines + 1 (67 default)
21D	03	Top margin (3 lines default)
21E	3F	Number of lines to print, including the top margin (63 default)
21F	08	Left margin inset (default 8)

Figure I: Addresses and values of printer codes and page dimensions in BrainStorm. All addresses and values are shown in hexadecimal form.

Figure 1 shows the default settings in BrainStorm for both printer control codes and page dimensions, together with their addresses in the program.

BrainStorm is a CP/M program, and the easiest way to change the codes to the values required is to make use of the SID.COM program supplied on the programming utilities side of the CP/M Plus system disc.

If you have never used SID.COM, don't worry, it isn't as fearsome as a lot of people seem to think, and the process is quite straightforward. But for

safety, before doing anything else, copy BRAIN.COM on to a blank disc and also SID.COM from the system disc, using PIP.

The simplest way is to load CP/M, make sure that side 1 of the system disc is in the drive and type PIP and press RETURN. When the asterisk (*) prompt appears, insert side 2 of the system disc and type:

B:=A:SID.COM

and press RETURN.

You should insert the blank disc into the drive when prompted to insert the disc for B: (or if you have two drives, make sure the blank disc is already in drive B). When the asterisk prompt returns, insert the disc containing BRAIN.COM into the drive and type:

B:=A:BRAIN.COM

and press RETURN.

Finally, press RETURN again, to leave PIP and return to the normal CP/M command prompt.

You have now got the required programs on to what was the blank disc, and even if you do get things wrong you still have your originals on the other discs and you can try again. For now, I shall just show what is required to change the page lengths to suit A4 paper.

Using SID for what we want to do is quite simple. Type:

SID BRAIN.COM

and press RETURN. This will load SID and also the BRAIN.COM program, and when loaded, a message along the lines of:

CP/M SID – Version 3.0
NEXT MSZE PC END
3880 3880 0100 DAFF

will appear, followed by the SID hash (#) prompt. Type:

S21C

with no spaces and press RETURN.

The following message will appear:

021C 43

which, if you look at Figure 1, you will see is the value stored in the address 21C, which is 67 in decimal. You can change this value by simply typing the new one (as a hexadecimal number) and pressing RETURN. Enter 47, which is the hex number for 71 (page length of 70+1) and press RETURN.

The next address will then be displayed. Pressing RETURN without entering anything will leave the value unchanged and move on to the next one.

When you reach address 21E change the value to 43 (decimal 67- print 3 header blank lines + 63 lines of text + 1, which will leave three blank lines at the bottom as well, as page length has been set to 70+1).

Once you have changed all the values you want, enter a full stop and press RETURN. This is the instruction to SID that no more entries are required. The hash prompt will return and it is only necessary to save the modified program on to the disc. Type:

NEWBRAIN.COM

with no spaces and press RETURN. This will save the modified version as NEWBRAIN.COM. Hold down the CONTROL key and press the C key to tell SID you have finished with him and the CP/M prompt will return.

SID, incidentally, isn't as daft a name for a program as it sounds, as the initials stand for Symbolic Instruction Debugger, which is even more incomprehensible than SID

Now you can try out your modified version and see whether it does what you want. If it doesn't, re-load SID and BRAIN.COM and try again, or change another value. All being well, with the changes made above, the page length should now be suitable for use with A4 stationery.

Remember that if you want to change the codes sent to the printer initially, you must insert the new codes where indicated and also change the value at 209 so that it shows the total number of codes to be sent.

ATF – Advanced Tactical Fighter

Lee Paddon, Technical Editor of Flight International and long time Amstrad fan, takes to the skies with DI's latest game

DIGITAL Integration can hardly be considered the most prolific of software houses. Despite being around since the dawn of home computer history (way back in 1982) it has only produced a handful of games. But what games!

Over the years it has built up an excellent reputation in the heavyweight simulation scene. For this reason, ATF comes as a bit of a surprise. It is, at heart, an arcade game with a bit of strategy tacked on to it.

You control the ATF, an advanced, futuristic fighter. Your job is to help your side win the war. There are eight levels of difficulty, from rookie to ATF ace. This level determines how much damage each enemy hit does to the aircraft and the initial balance between good guys and bad guys.

Once the level has been selected, the program works out the scenario and displays the position of all enemy and friendly forces on a world map. This map is wrapped around, so to get to some parts of it, it can be quicker to go off one side and come on the other.

While on this map, you plan your sortie. You are given an intelligence report on the position of two enemy units which are loaded into your target database. All the other enemy units are shown as red blobs – you don't know what sort of unit they are, although if in the middle of the sea you can have a good guess.

The next screen is the war report which shows the number of units on each side, broken down into five types – bases, tanks, warships, communications bases and factories. You need at least one base to land, but destroying the enemy's doesn't seem to stem the tide of interceptors. However, if you damage a base, your side may capture it.

Tanks and warships govern where the war is won and lost. When all of one side's tanks and warships have been destroyed the game is over and the victory level assessed. Obviously, destroying these lessens the chance that they will destroy and capture your units. Communications bases coordinate forces. The more of these around, the more effective forces will be in capturing and destroying enemy units.

Factories and communications bases can also be damaged rather than destroyed to make them easier for your forces to capture.

The essential information to look for here is how the battle between the opposing land and naval forces is going. Can you afford the luxury of going for factories or bases, or must you try and stem the tide on land and sea?

Fuelled and armed

Then it's on to the arming screen. The ATF carries 8000kg of stores. A full load of fuel is always a good idea, leaving you with 6000kg for weapons.

Here comes the hard choice. Mavericks are convenient and potent weapons. Just fire and forget. But all that radar homing equipment makes them a bit heavy. These weigh in at 250kg a piece.

ASRAAMs (don't ask me what it stands for) only weigh 100kg but require guiding to the target.

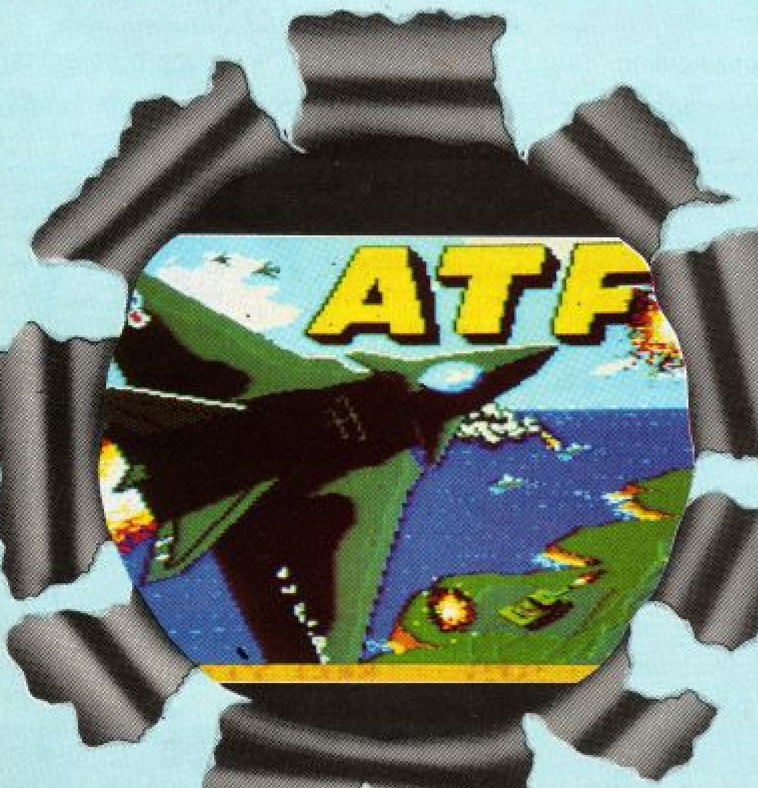
Lastly, there's a cannon for dealing with the hordes of interceptors that come your way. The mix of weapons is a matter of personal choice, but I found that if I loaded up with 15 Mavericks and five lots of cannon, it was usually sufficient.

Mavericks can be launched from about 80km from the target with the ATF going full tilt, jinking and weaving to avoid interceptors. Firing an ASRAAM on the other hand, means you have to slow down, get right on to the target's bearing, fly towards it and just as it pops over the horizon, fire the missile and guide it onto the target.

If the target isn't destroyed by the first missile, you've rarely got enough time to get off a second one so you've got to circle round and have another go.

With Mavericks, you've got plenty of time to get two or three missiles off at the target on one approach. ASRAAMs are hampered by interceptors turning up just as you're making your approach.





The weight of armaments is no real problem. If you can get off 15 missiles before running out of fuel or being forced to turn back due to damage, you can consider yourself pretty hot stuff.

After selecting the stores you want, it's off to the game itself. The screen consists of five areas. The main one shows a view of the ATF from

behind and above. The lower half of this area shows the undulating landscape criss-crossed by a grid of lines to give a feel of perspective.

The top part of the area shows the head up display (HUD). This gives the throttle setting and speed (usually the same unless the undercarriage is down or the aircraft is accelerating or decelerating), heading, target data, weapons status, altitude and ground height.

To the right is the scanner showing nearby ground and air targets. Underneath is the computer, which has four modes – world map, database, stores and ATF status. The world map simply shows the aircraft's present position and the position of the selected target. This is useful for checking your progress against the route you planned using the map screen at the beginning.

The database gives the bearing and range of all friendly and enemy forces mentioned in intelligence reports or which have appeared on the scanner. You can select any enemy type and then either step through all the units in the database or simply select the nearest one. This information is then transferred to the target data section of the head up display.

You just line up the heading readout with the target, bearing, wait until you're within 80km of the target and let a Maverick fly. The "weapon ready" symbol will disappear from the HUD and will reappear when the missile hits. Or if you're feeling really brave, you can go in there with an ASRAAM and tough it out at point blank range.

The stores status gives the remaining amount of cannon ammunition and missiles, while the ATF status screen shows the amount of damage taken. This is usually more noticeable by the way the damage restricts the maximum throttle setting. If too much damage is caused, you cannot keep up your airspeed, so you stall and crash.

Underneath this is a message panel which tells you when new enemy forces have been located, the results of your missile launches and helpful bits of advice like reminding you to lower the undercarriage when coming in to land. Therefore when a message about new forces comes up, if you quickly hit the Return key its data is put into the target display and you can immediately loose off a missile at it, often without needing to turn or slow down.

The last panel, at the bottom of the screen, contains the fuel gauge and status lights showing if you're in terrain-following or auto mode, undercarriage position and SAM lock on. SAMs are a minor irritation. When the SAM light flashes and a warning bleeper sounds, you just hit the jammer. Occasionally, you might get caught out in a moment of panic. This is bad news. SAMs always hit, and are always fatal.

The other bane of your existence is interceptors. They either attack head on or try and sneak up from behind. The head on attacks are simple, just let fly with a few rounds as the enemy starts his approach.

Attacks from behind can be lethal. You must break hard away from the enemy as soon as he appears. Any delay and he sticks to your tail like glue, pumping cannon rounds into your craft. On higher levels, just one mistake can prove fatal. Eventually, a following enemy gets bored and turns away. Now's your chance to quickly change direction and open up before he can escape. The other option is to dodge. You don't get that many points for destroying them and it doesn't seem to make much difference to the number that attack.

Two rather neat high tech touches are the terrain following and automatic landing systems. Terrain following does just that, the aircraft climbs and dives in response to the hills and dales. This looks impressive, but is of limited practical value. The manual says that it reduces the number of SAMs that come at you, but I hardly noticed the difference.

The only thing to remember with this system is don't disengage it when in a dip as you'll tend to fly straight into the nearest hill. The manual also recommends you to use it when at full speed, but I never had any trouble.

The landing system really takes all the hard work out of life. Let's face it, this is a shoot-'em-up, not some nasty complicated flight simulator. Once you are within about 80km of a base, the auto landing light starts to flash, you can then hit the land button and go away and making a cup of coffee while the ATF gets on with it. It also helps to stick the undercarriage down at this point.

Fortunately, the auto lander won't crash land you on the tarmac, but will carry on blithely flying in a straight line, presumably until you run out of fuel. This is quite a useful tactic for carefree travel to the battle zone. If your proposed target is quite some distance away it can be a pain constantly having to battle interceptors. So deliberately mess up your approach while facing the direction you want to go. Then carry on until you reach the target area, disengage auto land and carry on.

It's a pity that you *have* to use auto land. Any macho seat of the pants types will be disappointed if they try a manual approach – you just dig a neat hole in the ground.

Control is by joystick or keyboard, and the plane moves very smoothly as it banks left or right. There are only three positions for the aircraft, turning right, left or straight ahead.

The terrain scrolls smoothly without any sign of jerky movement even when there are several interceptors on the screen. At full speed, the effect of the ground flashing past beneath you is really satisfying. Speed freaks can turn off the lines, which speeds up the action.

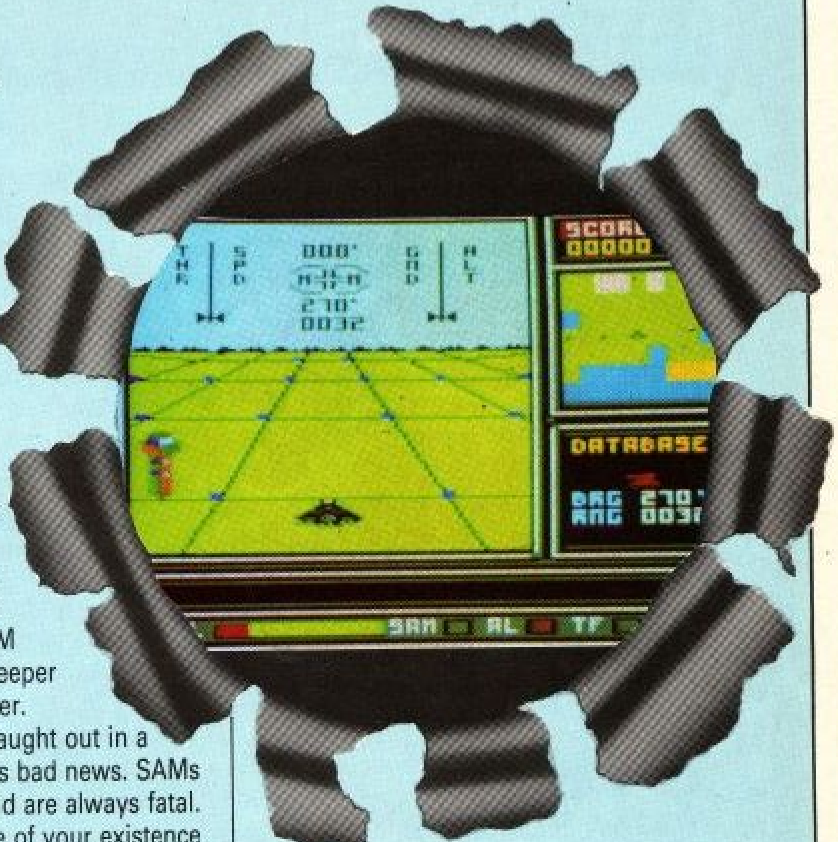
Once on the ground, a war report is shown. The first bit gives an analysis of your performance. It shows the number of targets you destroyed, including friendly forces for those who want to be popular with the General Staff, along with the number of interceptors downed. This is compared with the amount of damage taken during the sortie to give an assessment of your performance.

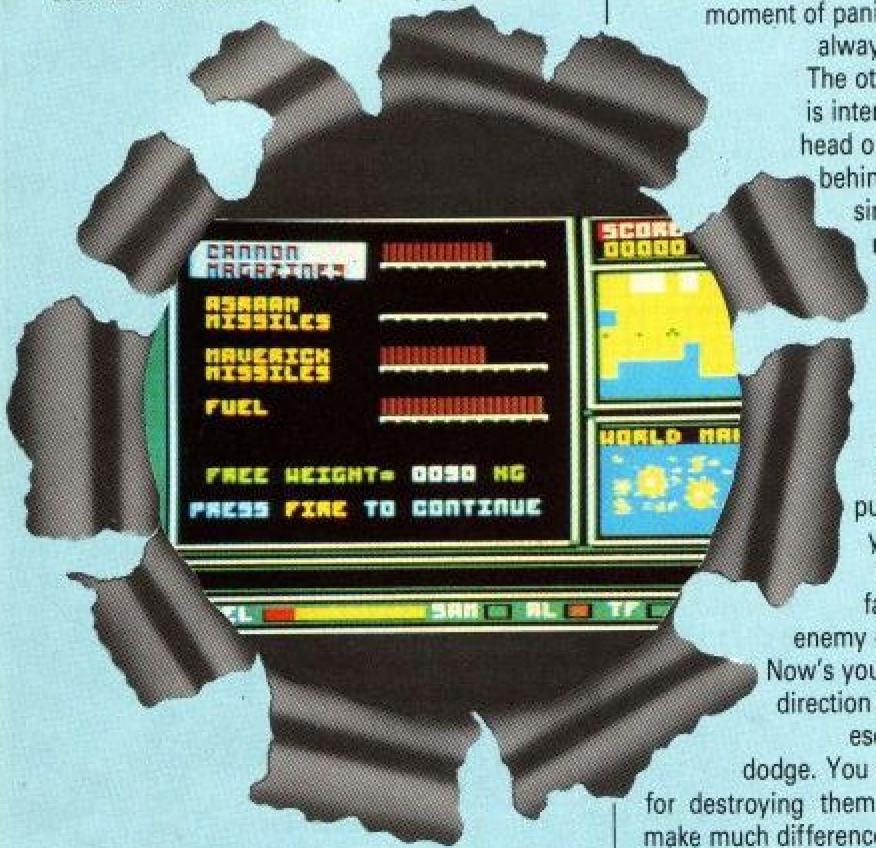
Then the report goes on to show the change in the strategic situation with the gains and losses for each side. Gains will include new units produced and enemy units captured.

Losses will show any units captured or destroyed by ground forces or your ATF. Then it is back to the intelligence screen, war report and arming screens.

The game ends when either all three of ATF's have been lost or one side has lost all its land and naval forces.

Altogether this is very slick, well produced and





presented. Obviously there is a chance that the game will fall between two stools. It may be dismissed by the shoot-em-up fraternity as too complex and yet harangued by the flight simulator aficionado as being too simple.

There are 16 control keys plus a joystick. At least half a dozen of these are in pretty constant use. It is rare for a shoot-em-up to allow itself more than a couple of keys over and above the joystick. ATF certainly makes no pretence to be a flight simulator. It sacrifices all subtlety for speed and smoothness. There is certainly plenty of that with very smooth animation and graphic detail.

But if you are patient enough to master the complexities of the button infested keyboard and are a bit browned off with the up/down scrolling blaze away type of game, this could be a welcome change.

The strategy element is well thought out and works well. It doesn't pay to expend all your ammunition on a recalcitrant enemy base while ranks of his tanks and warships run riot. Ruthlessness, daring and fast reflexes are blended with thoughtful planning and an ability to recognise when discretion is the better part of valour – you run away.

The Advanced Tactical Fighter

The good thing about producing a game based on the Advanced Tactical Fighter is that no one can accuse you of inaccuracies. The plane has not made it off the drawing board yet.

At the moment Lockheed is in competition with Northrop to build a prototype. These will be flight tested by the end of the decade. One version will then be chosen by 1991 for full scale development.

Alongside this is a competition pitting Pratt and Whitney against General Electric for the engine. So there will be four prototypes giving all permutations of airframe and engine.

A good deal rides on the ATF. Despite the present climate of budget cutbacks, the project seems certain to go through. By the time production starts in the late '90s there is no knowing what the Russians may have come up with.

Superior design

The US has been badly shaken by the excellence of recent Soviet designs including the Flanker and Fulcrum. By the late '90s the F14 will be nearly 25 years old and even the F18 Hornet will be a bit long in the tooth. The F20 Tigershark programme was recently cancelled.

The ATF specification calls for a small "cheap" fighter costing less than $36 million apiece. This has already led to design problems with thrust reversers for short landing going out the window.

Speculation is that the plane will be highly agile with many parts made of composite materials such as carbon fibre. As much stealth will be built in as possible, along with multi-function radar. Basically it has got to be able to see and destroy the enemy before the enemy does the same to it.

Digital Integration has a record for innovation and technical excellence that is second to none. Formed in 1982 by Dave Marshall and Rod Swift, it quickly established its pedigree with Night Gunner, a multi-level shoot-em-up with outstanding graphics and gameplay.

Next came Fighter Pilot which seemed to hang around in the charts for ever *(deservedly so – Ed)*. While others were content to call anything with a few instruments and a bit of graphics a flight simulator, DI put in realistic performance and absorbing strategy.

Then, somewhat later than promised Tomahawk was released. This built on Fighter Pilot by adding a lot of ground detail and gameplay as you slugged it out with ground targets and helicopters. It was the first really plausible helicopter simulator, and set new standards in what people expected from simulators.

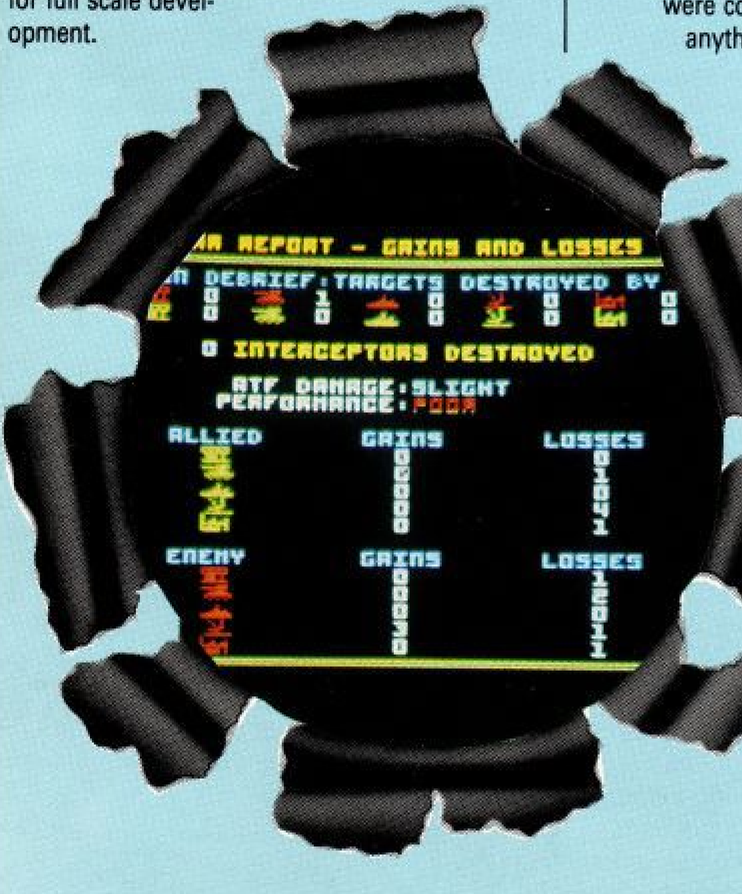
You didn't just simulate any aircraft, you included the characteristics of a particular craft. You didn't play in isolation, you had missions to perform. DI ended up with a rattling good game.

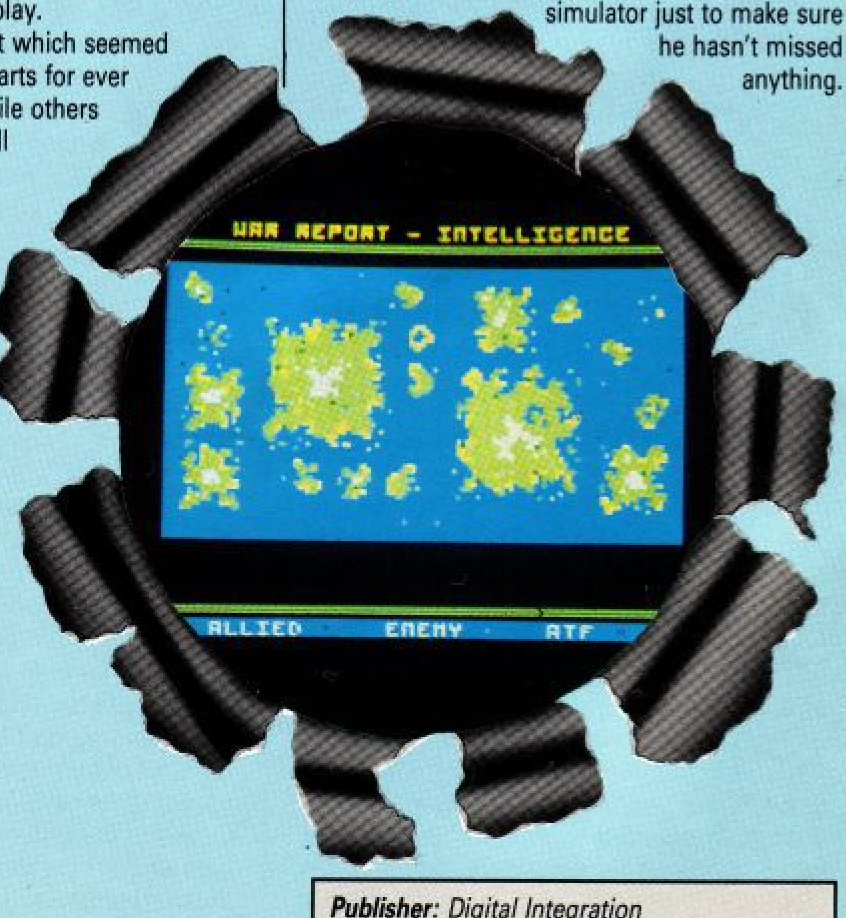
Then another rather overdue product arrived in the form of TT Racer. Winner of the "coming soon" prize two years running, it was one of Digital's less well received games; it nevertheless led to the recently released Bobsleigh, where Rod Swift's screen swivelling banking effect seemed more at home.

The company has been expanded slowly over the years. The team is presently working on Fighting Falcon over several formats which Dave Marshall promises is going to be their best yet. This represents a return to the old stamping ground of full blown flight simulators.

Dave Marshall used to be involved with the design of "real" flight simulators for the Royal Aircraft Establishment. this not only means he knows a thing or two about aircraft, he still has plenty of friends in the industry.

His research for the latest game includes pilfering press releases from *Flight* magazine and popping off to have a go on a professional F-16 simulator just to make sure he hasn't missed anything.





Publisher: *Digital Integration*
Price: *Cassette £8.95, disc £13.95*

MUG THE INDEPENDENT MicroLink User Group NEWSLETTER

Bulletin Board update

The MicroLink Bulletin Board has just had a spring clean, and a backlog of 9,000 old messages removed. But at the rate at which it's being used, it won't take more than a couple of months to replace them.

The Bulletin Board is an area where anyone can leave a public message, start or join in a discussion on any topic or just ask for help.

The range of subjects covered is huge and always changing; cars are bought and sold, philosophy, pop music and poaching argued about and the reasons why somebody's software doesn't seem to work are revealed.

There are even the occasional trivia quizzes (well, do YOU know how many electric tramways are still running in the UK?).

There's nothing quite like it outside the world of computers, but be warned. It can be very addictive.

Preparing for Prime time

EVERYONE upgrades their hardware occasionally, and MicroLink is no exception. But it's not an Amstrad PC1640 they're getting.

For some time now, the rate at which people are joining has put a bit of a strain on the old Prime 850 computer, and many users would agree that sluggish is perhaps a mild way to describe MicroLink at peak times.

Now work is underway to install a Prime 9955 – not only has it got a longer name but it's faster and better able to cope with the increased demand.

There's a lot of things to be done before the switchover can happen, software has to be changed and the digital detritus collected on the old computer in its years of dealing with us humans has to be cleared up.

Exactly how much better the new service will be isn't clear, although technical people tend to use words like "massively" and get quite excited.

We're all eager to find out . . .

The MicroLink User's Manual

ONE of the projects that MUG is coordinating is the production of the MicroLink User's Manual. Designed to complement the information given to every MicroLink subscriber on old fashioned paper, the manual sets out to be an online way of describing the many facilities available on MicroLink from the point of view of the people who use them.

At first, MicroLink can appear to offer a bewildering selection of things to try, and even for experienced users the different options can be confusing. And there's always a way to do things faster, or at less cost.

Of course, the information to help people do this has always existed. But it's been hard to find, and until now there hasn't really been any way for users to share their discoveries in such a way that others will be able to make use of them. The MicroLink User's Manual sets out to remedy this problem.

At the moment MUG is collating the information. Sometimes the amount of data collected by users can be staggering – one subscriber mailed in over 200k of hints and tips saved up over years. Of course, we're just as happy to hear from anyone with one good idea.

All the data will be indexed and made available; the exact design is still being discussed, but like anything else MUG does, it will be free to use.

User groups are good news

THE MicroLink Users' Group came about as a result of various subscribers asking whether there was any organisation run to help users.

User groups in any area are usually good news; they form a focus for ideas, opinion and self-help and give the users a collective voice.

The flexibility provided by MicroLink and Telecom Gold make MUG particularly useful. There are no printing costs for newsletters and there's almost instant access to everyone in the group through the mail system.

MUGs been going for about a month now, and we've already formed a team of people who have volunteered to answer queries and help anyone with MicroLink-related problems.

It's a small world . . .

. . . but full of Telecom Gold computers, it seems. The UK Telecom Gold system, of which MicroLink is the most active part, is just one sector of a global network called Dialcom.

While MicroLink is System 72, and other UK computers are in the range 70 to 90, there are Dialcom computers almost everwhere. And like international telephone exchanges, they've all got their own numbers.

MUGger Adrian Mars is trying to find out just which computers are where. This might seem an eccentric, if harmless, hobby, but such information as is available on MicroLink is difficult to find and (apparently) out of date.

And it could be the first step to organising an international group of Dialcom users, which really would be a first and another step towards the electronic community of tomorrow.

If you know anything about the Dialcom network numbering scheme, then Adrian (MARS.ADRIAN on the mail system) and MUG would be glad to hear from you . . .

Odd offers

THE prize for the most unusual use of MicroLink goes to . . . well, nobody knows. But the last month has seen some odd goings-on.

There have been people advertising for goose shooting, others looking for burned out buildings and the usual range of online floral orderings to persuade mothers and lovers that computers aren't so bad after all.

But you have to take your hat off, if nothing else, to Keith Channing. He helps run CORAL, Clothes Optional Recreation and Leisure, a naturlist organisation dedicated to promoting the various activities enjoyed by those who feel happier without their clothes on. And with a bit of advertising on the Bulletin Board and a touch of help from MicroLink themselves he's gathering together all those on the system who are similarly inclined.

Now that has to be the most original use for MicroLink.

Unless (of course) you know better...

Suggestions of material for inclusion in the MUG Newsletter should be sent to Rupert Goodwins on MAG95816

MicroDesign

Jill Lawson finds that a cross between a desktop publishing package and an art utility can add sparkle to hard copy

SOME time back in the autumn of 1985 Simon Hargreaves won first prize of £1,500 in Amsoft's software competition for a program known as Micro-Draft. Primarily this was a Mode 2 utility for constructing circuit diagrams using a series of purpose designed manipulatable icons, designed on a choice of either 16 x 16 or 24 x 24 (Mode 1 style) grids, in addition to the more common (line, box, circle, and so on) drawing tools.

Since its inception the program has grown to become a fully-fledged artwork/graphic design package for the CPC 6128, with quality of the printed output being the criterion on which it is based. Also it has been re-named MicroDesign.

Although usable for designing anything up to a full A4 page, it is not intended to be a DTP package. Some suggested alternative applications are shown in the printouts at the back of the accompanying manual and the dozen or more demo drawings on the disc – cassette labels, maps, diagrams, greeting cards, hand bills, letter heads, crosswords and the like.

Documentation

The 12-page manual with the evaluation copy was simple to understand, with clear instructions on how to perform each function. A couple of hours playing around with the program should be sufficient to get you started.

For wallies like me, perhaps the author would consider including the following short program needed for use with the CONVERT facility, which allows files from popular art packages such as Screen Designer and Advanced Art Studio to be loaded into MicroDesign.

```
MODE1/2:LOAD"pic",&C000:WHILE INKEY$=""
:WEND:|CONVERT,"pic.DR"
```

The layout page is presented in white on a dark blue background. Since the manual refers to black and white throughout, and printouts will usually be likewise, you might prefer to turn down your brightness control to change the blue to black.

A panel to the left of the screen shows the shape of the current page (initially A4 upright). On the right of this there is a menu which allows you to perform functions on the layout page, such as new, which clears the screen and enables you to change the shape of the drawing area to A4 sideways, or to a strip format (more of the latter later), and block, with which you can define an area which can subsequently be erased, moved or copied.

From the menu you can select one of the other pages (design, printing, filing or icon editing), or click on design to take you directly to the drawing page. Although AMX mouse-compatible, speedy operation is possible from the keyboard, including the cursor keys and numeric key pad. I was using a converted CPC 464, and expect that combinations I found a little awkward will be more comfortable on the CPC 6128.



The dog, tiger, mask and train were drawn with Screen Designer in Mode 1, loaded into Advanced Art Studio, amended, converted, re-saved as drawing elements rather than full screens, then assembled. The lion was an Advanced Art Studio Mode 1 picture. The gulls, originally in Screen Designer Mode 0, were changed to black and white in Art Studio Mode 0, then changed to Mode 1 so that they could be converted. Butterflies and text were added with MicroDesign.

Design

The design page zooms in to a pre-selected area of the layout page to perform the drawing functions. Points/freehand drawing is possible in three sizes/widths using the cursor keys and spacebar, and solid or dotted lines and angles may be drawn.

Using a variety of combinations of the numeric keys, there is a sophisticated facility to construct circles, rectangles, triangles, ovals and diamonds in outline, solid, or filled with any pattern from



Icons were used for the coach wheels and decorative motifs, and "copy block" for the second pair of horses, with subsequent minor adjustments. Text was partly supplied, partly purpose-designed. For speed I drew only the necessary letters in each style.

the icon table. On this page blocks can be erased, moved or copied, and they can also be stored and glued down as many times as required anywhere on the drawing. Mirror in each direction may only be performed within the store/glue option.

Write allows small text, in four sizes/styles, to be typed in direct from the keyboard in a choice of four directions. Drawing functions use Mode 1 size pixels, but with zoom, a small area is magnified further for editing with either full size, or half size (Mode 2) pixels.

The Escape key will abort an operation, the screen can be centred, the cursor can be centred, the last operation can be repeated, and the design area can be scrolled in any direction.

The f0 key is the do key, fixing the last performed action, and pressing the [.] key will Undo the last f0.

Across the lower part of the design screen a removable panel is used to display one of three pages of icons. The 13 on the top row are based on a 16 x 16 square pixel grid, the nine on the bottom row on a 24 x 24 grid.

Sets of icons, provided on the disc, give a selection of motifs, a variety of shade, texture and pattern fills, and assorted elements for circuit diagrams. Choosing icon from the design screen menu picks up a copy of the currently selected one, which can then be moved around the design area and planted accurately where it is required.

Any of the icons may be rotated, mirrored or inverted and may be opaque, transparent or xor (swapping black and white inks where the icon and background overlap). The icons are a pleasure to use and altogether their smooth movement, speed, and ease of positioning is most impressive.

Selecting icons from the main menu accesses the icon editing page where any or all of the icons may be redesigned. They may be saved either as separate pages or as a complete set. There are several icon files on the disc containing complete fonts of display text which you can enter from the keyboard if you wish.

Memory saving

Should you decide to design your own fonts, the keyboard entry will only work if characters are designed in the same relative positions.

Saving (and loading) icons, a full size drawing, or a predetermined area of a drawing is done via the Filing page. Picture data is stored in compressed form. When part of a drawing is reloaded its position can be adjusted on the layout screen to enable several small pictures to be assembled on one page.

Mode 2 drawings, drawn with other design packages, can be loaded in easily with the CONVERT facility. If you have Mode 1 drawings these, too, can be converted, but usually it will be necessary to do a little re-drawing first, replacing some coloured areas with stipples so that definition is maintained.

This gives very satisfactory results and will often be much quicker than starting again from scratch.

The printing page offers a selection of options for outputing to an IBM or Epson-compatible dot matrix printer. Each of the A4 formats may be printed at full, half or quarter size. The strip format, mentioned earlier, can be printed only at full size (approximately one third of an A4 sheet) or at half size.

Resolution is exceptionally good where strips are used, and, without form feed between, three or four can be linked to produce a high quality full page printout.

A 'one-pin' printing option gives extra accuracy to printouts (provided you are not pushed for time) and you can choose single or double pass printing, with the latter being handy if your ribbon is worn.

I have already used the program to produce the mastercopy of a handbill for subsequent photocopying, and to design the layout of a business card, and foresee a host of other uses for it in the future.

The Eiffel Tower on the facing page was drawn originally as four separate screens with Screen Designer Mode 1, in black and white only. These were each loaded into, and rotated within Art Studio. It was necessary to deal with the broad base in two stages. Converted files were used with the strip format.

Because the base would not fit into one strip, the missing bit was drawn on a second strip, and by printing that one immediately after the other, with the form feed turned off, it was possible to concatenate the two strips to make a complete drawing.

Conclusion

MicroDesign is for those who are primarily concerned with producing high quality printed material rather than for the on-screen artist. The program has a lot of features, all of which seem to perform most efficiently.

The manual is exceptionally easy to understand and all functions are described clearly and simply. Although not suitable if you are looking for an all-purpose art utility, MicroDesign would make an excellent companion to a more conventional drawing package.

MicroDesign is available from Siren Software for £24.99, or with a mouse and interface for £64.99.

Basic tutor

Rounding up the integers

ON GOSUB can point your program flow in a number of directions with remarkable ease. Jeff Walker shows how to tame the beast

MANY years ago, after my brother and his wife produced their fifth baby, I decided to write a program to remind me of all the birthdays I needed to remember. In those days Basic was still a wonderful mystery to me, and all my programming efforts consisted mainly of INPUT and PRINT statements (but they were mine!).

After weeks of mental anguish I eventually produced a program that presented me with a menu of 20 names. Entering a number between 1 and 20 resulted in a colourful display of the person's date of birth, plus a rendering of Happy Birthday To You that I'd found in a book somewhere and tagged on to the end.

The lines that decided which subroutine to execute, and therefore which date to display, looked like this:

```
IF choice=1 THEN GOSUB 1000
IF choice=2 THEN GOSUB 2000
IF choice=3 THEN GOSUB 3000
     :
     :
IF choice=20 THEN GOSUB 20000
```

I was proud of my program, and the kids loved it, but what a lot of time I'd wasted typing all those IF...THEN statements. ON GOSUB was what I should have used.

```
ON <x> GOSUB 100,200,300, etc ...
    /          \   \   \
   /            \   \   if x=3
integer          \   \
expression        \   if x=2
or variable        \
                    if x=1
```

Before we see an example of its use, let's first make sure we understand the syntax.

The integer expression or variable must evaluate to a number in the range 0 to 255. Negative numbers and numbers greater than 255 will cause an error message.

"Integer expression" means that you can use a calculation in place of a single variable if you wish. Something like:

ON (choice/3*2) GOSUB ....

The bit between the brackets is the integer expression. Or you could use a defined function there if you like:

ON FNrandom(1,10) GOSUB ....

As I've said, provided the expression evaluates to a number between 0 and 255, the calculation can be as long and complicated as you like.

OK. Let's see ON GOSUB in action.

```
100 MODE 1
110 TRUE=(1=1)
120 FALSE=(NOT TRUE)
130 BORED=FALSE
140 '
150 WHILE NOT BORED
160   PRINT
170   PRINT"1. Do this"
180   PRINT"2. Do that"
190   PRINT"3. Bored"
200   PRINT
210   INPUT"Select 1 to 3";ch
220   ON ch GOSUB 1000,2000,3000
230 WEND
240 '
250 END
999 '
1000 PRINT:PRINT"Choice 1"
1010 PRINT:RETURN
1999 '
2000 PRINT:PRINT"Choice 2"
2010 PRINT:RETURN
2999 '
3000 PRINT:PRINT"Bye."
3010 BORED=TRUE:RETURN
```

The relevant line here is line 220. Basically it is a shorthand way of writing:

```
IF ch=1 THEN GOSUB 1000
IF ch=2 THEN GOSUB 2000
IF ch=3 THEN GOSUB 3000
```

Run the program and test that it works by entering 1, 2 and 3.

Now enter 0, followed by a number greater than 3 but below 256. All that happens is that the menu pops up again and you are asked for more input. Yes? Good.

This is because if the value of the integer expression is zero, or higher than the amount of line-numbers listed after GOSUB, then no subroutine is executed at all. Control passes to the next instruction. In our case this is the WEND, which causes control to pass back to the WHILE, and so display the menu again.

Enter a negative number, or a number greater than 255. Hey! If you're gonna argue, at least argue properly. I think a line like:

```
215 IF ch<0 or ch>255 THEN ch=0
```

is called for here.

And now we come to one of those "features" of Locomotive Basic that they don't tell you about in the book. Run the program and enter 1.49 as your choice. Hmmm. What's going on? I thought "ch" had to be an integer. Now enter 1.51. Huh?

No comprendo? Well, let's analyse what we've got:

INPUT of 1.49 RESULTS IN Choice 1
INPUT of 1.51 RESULTS IN Choice 2

Aha! ON GOSUB seems to be doing a bit of rounding on the quiet. Not only that, but it is doing it intelligently, rounding up or down to the nearest integer. Must think of use for that some time.

So far we've presumed that the integer expression is going to progress naturally from 1 through to whatever in steps of 1. But what if you know that your expression is never going to equal 1 or 2, but will start at 3 and then progress in steps of 1?

Simple. Subtract 2 from the expression and we're back to 1, 2, 3.

Or perhaps your expression will start at 1 and then progress in steps of 2 or 3. In this case you will need to integer-divide by the step-size, and then add one. For example, if your step-size is 2:

```
ON INT((ch/2)+1) GOSUB ....

                stepsize
          ch       /
            \     /
If ch=1, then (1/2)+1 = 1.5
         and INT(1.5) = 1

If ch=3, then (3/2)+1 = 2.5
         and INT(2.5) = 2

If ch=5, then (5/2)+1 = 3.5
         and INT(3.5) = 3
```

Can you see how we've turned a progression of 1,3,5 into the 1,2,3 that ON GOSUB likes?

But what if you know your expression isn't going to progress in steps of one, or two, or three ... but is very nearly a random progression. Something like 1,3,6,7,9, say, in which the numbers 2,4,5, and 8 don't appear? No calculation is possible, so it seems we will have to go back to IF...THEN. But think about it. Will we?



If we know that the numbers 2,4,5 and 8 will never happen, can't we safely stick dummy subroutine numbers into the list in those positions because we know they will never be executed? Yes, we can.

I always use 1 as my dummy – because it's quick to type – and in the program there would be a line that read simply:

```
1 REM dummy line for ON GOSUB
```

Then my ON GOSUB line would look something like:

```
ON ch GOSUB 1000,1,3000,1,1,6000,7000
,1,9000
```

In actual fact you don't really need a line number 1 in the program, but it does help to make what's going on a bit clearer. However, if the subroutine is never going to be executed, it matters little what line numbers you use as dummies.

Another problem is when your list of line numbers becomes so long that Arnold says beep. Remember, you can only have 255 characters, including the line number and spaces, in any line of your program.

If your program is an adventure-type game with, say, 70 locations, and each location has a number from 1 to 70, then ON GOSUB is perfect for it. But if we can't list 70 line numbers on one program line because they won't fit, then what do we do?

The answer is staring us in the face if we did but know it.

Imagine we've reached the stage of your adventure program where the player has typed in an instruction to move from his present location (N,S,W,E), and the program has calculated what the number (loc) of the new location is. Now take a look at the following. (Presume a GOSUB 500 has been executed from the main loop).

```
500 ON (loc/10)+0.49 GOSUB 900,910,920
    ,930,940,950,960:RETURN
898 '
899 'locations 1 to 10
900 ON loc GOSUB 1000,1100,1200,1300,1
    400,1500,1600,1700,1800,1900:RETUR
    N
908 '
909 'locations 11 to 20
910 ON loc-10 GOSUB 2000,2100,2200,230
    0,2400,2500,2600,2700,2800,2900:RE
    TURN
918 '
919 'locations 21 to 30
920 ON loc-20 GOSUB 3000,3100,3200,330
    0,3400,3500,3600,3700,3800,3900:RE
    TURN
928 '
929 'locations 31 to 40
930 ON loc-30 GOSUB 4000,4100,4200,430
    0,4400,4500,4600,4700,4800,4900:RE
    TURN
938 '
939 'locations 41 to 50
940 ON loc-40 GOSUB 5000,5100,5200,530
    0,5400,5500,5600,5700,5800,5900:RE
    TURN
948 '
949 'locations 51 to 60
950 ON loc-50 GOSUB 6000,6100,6200,630
    0,6400,6500,6600,6700,6800,6900:RE
    TURN
958 '
959 'locations 61 to 70
960 ON loc-60 GOSUB 7000,7100,7200,730
    0,7400,7500,7600,7700,7800,7900:RE
    TURN
```

Well, well, well. We've found a use for that feature we discovered earlier. You know, the one where ON GOSUB rounded the expression up or down to the nearest integer.

All those numbers all over the place make the routine a little hard to read, so I'll explain what is going on.

For a start, let's say the new location number is 37. So we put that number into the expression in line 500:

```
(loc/10)+0.49

translates to

(37/10)+0.49 = 4.19
                 \
     the result of the expression
     in line 500 if loc=37
```

ON GOSUB then rounds this result, 4.19, down to 4, which means control will branch to the forth subroutine in the list. That's line 930.

Now we evaluate the expression in line 930:

```
loc-30  translates to  37-30 = 7
                              /
                             /
     the result of the expression
     in line 930 if loc=37
```

The result, 7, sends control to the seventh subroutine in the list in line 930, which is 4600. And that, the S/R at 4600, is where the information about location 37 is kept, That is its description to be displayed on the screen.

Now this routine isn't going to work all on its own. You're going to need 70 subroutines for the locations, and a main loop to drive the program. That's your exercise for this month, but before I go I'll give you a few pointers.

In the location subroutines, after the description has been printed, include a line like this:

```
north=23:south=17:east=39:west=56
```

The four variables here hold the number of the location that is reached from moving in that direction from the current location. If movement isn't possible in any of the directions, then make its variable equal to zero.

In the main loop you would then have something like:

```
loc=1:GOSUB 500 'starting point
WHILE NOT DEAD
  INPUT"Which way";dir$
  oldloc=loc
  IF dir$="N"THEN loc=north
  IF dir$="S"THEN loc=south
  IF dir$="E"THEN loc=east
  IF dir$="W"THEN loc=west
  IF loc=0 THEN loc=oldloc
  GOSUB 500
WEND
```

Go to it! Tarra.

Pixel prowess

You need more than just basic artistic skills to make most of drawing packages on the CPC. Jill Lawson explains the techniques necessary to produce some stunning effects



THE best way to learn about drawing is to experiment. By following a simple set of guidelines your first experiment should end up with a picture of a car.

Most of you will have an Amstrad CPC, and whether you bought it primarily for business, word processing, programming, or just alien-bashing, I assume that, now, you would like to be able to draw pictures on your computer screen.

If you don't already have an art utility, buy the best that you can afford. Although a simple drawing program can produce some very professional results, it will be a time-consuming business, and anyway you may well bless the day, when you want to turn an object around, or move it five pixels to the left, that there is a mirror or block-move facility to do this for you quickly and easily.

For anyone with a CPC 6128, a CPC 664 with a 64k memory expansion, or a CPC 464 with expansion and disc drive, the best choice is undoubtedly Rainbird's Advanced OCP Art Studio. Before this was available, I used Screen Designer from Amsoft for all my pictures, and although it doesn't have the sophisticated features I have mentioned, or even a stipple fill, its overall ease of use still makes it my second favourite.

Avoid lightpens. Although they can be fun for on-screen doodling, it is difficult to obtain single-pixel accuracy, and if you use one of these devices for long periods your shoulder muscles could become quite painful. Also they pose problems when working over dark areas in your drawing, which make them unacceptable as serious drawing tools.

Conversely, a mouse is an ideal drawing instrument, whose freedom of movement is particularly suitable for brush and spray work. The games players among you will probably find a joystick an adequate (and cheaper) alternative.

Pixel pix

Unless you are a natural-born artist, the hardest part of creating any piece of artwork is actually getting started. First of all you should thoroughly familiarise yourself with the mode of operation employed by your particular drawing program.

Try out all its different functions – most will be explained clearly in the accompanying manual.

Try drawing a brick wall, then decorate it with graffiti, or cover the screen with a variety of shapes, and fill them in different colours and textures (if available).

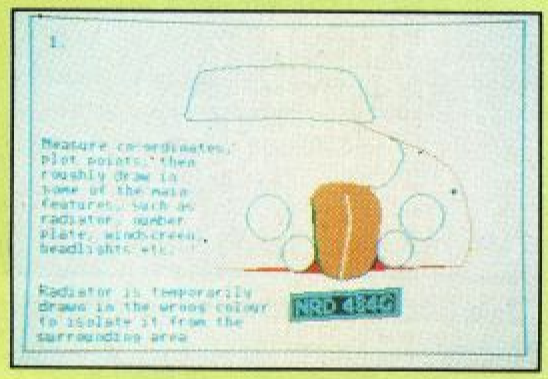
Explore the effects of all the functions on offer.

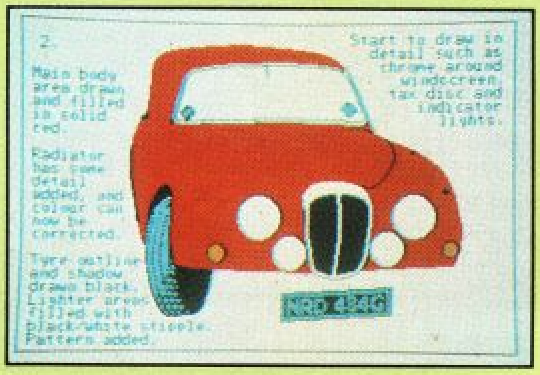
> The car drawings accompanying this article were produced using the Advanced OCP Art Studio. If you are using some other utility many of the instructions will still apply, and where necessary tips will be included for Screen Designer users.

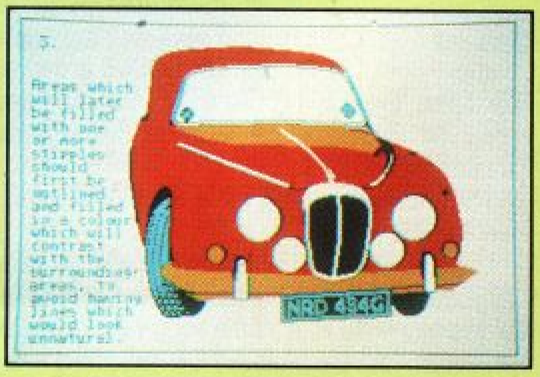
If you're going to have a disaster due to misunderstanding the instructions, far better to do it now than in the middle of creating your first masterpiece.

Depending on the complexity and range of options, this initial learning period could take from two to 10 hours, but this is time well spent, during which you will discover that one of the most powerful bonuses of drawing on-screen over more conventional art media is the ability, where necessary, to re-draw again and again until something looks just right.

An important point to note is that any area







filled in a single colour may be re-filled with a different colour or pattern later, but once filled with a stipple it cannot be re-filled, although it can be re-coloured with a brush or spray.

Most drawing programs operate in all of the CPC's three modes. There are special difficulties when working with just two colours, so it is wise to make your choice between the rather chunky multi- colour Mode 0 and the four colour higher res Mode 1.

It is quite possible to produce attractive pictures in Mode 0, but I generally work in Mode 1, which is especially satisfactory in Screen Designer, where the 1, 3, 7 and 9 keys plot true 45 degree diagonals.

Although a palette of only four colours may seem very limited, stipples, created with single alternate pixels in all possible combinations, will give you a further six "colours", and with the right choice it is surprising just how wide a range of colours are obtainable.

Colour bind

When choosing your colours it is sensible to adopt a discipline in the order in which you make that choice. Even if your present program does not allow you to merge pictures or save the contents of a defined area you may update at some future time and wish to use parts of two different pictures together. I always choose the lightest of the four for the initial background colour, with the darkest of the four next, and the other two in descending order.

Deciding which ones to use can be quite difficult, as mixing colours on a computer can produce quite different results to those obtained in the paintbox. It is well worth while to construct a palette screen showing all 10 hues. This can be loaded before starting each drawing to help you make a decision.

I find it useful to have a small colour key panel on-screen while drawing. If you have a green-screen computer choose 26, 0, 9 and 17 for maximum contrast.

By far the easiest method when starting out is to copy a picture that you like. This could be a simple cartoon with large areas of plain colour; a favourite photograph of a landscape or flowers; maybe even something by one of the great masters.

However, in the first instance it is probably a good idea to choose a subject with a nice clear outline. You should bear in mind that, while it may be all right to attempt to draw the Mona Lisa, or use books as a reference to draw places, animals, trains and boats and planes and so on which you could not possibly hope to see for yourself or draw from memory, it is unethical to copy contemporary artwork from advertisements and magazine covers or plagiarise someone else's artistic concepts. So don't get caught.

If the original from which you are going to work is a similar size to the screen drawing area (9.5ins x 6.25ins) you could trace the main outlines on to a sheet of clear acetate with chinagraph pencil or marking pen, Blu-tack this to the front of your monitor, then draw round the lines on the screen.

For pictures which are much smaller or larger, a different method can be adopted. Construct a rectangle around that part of the drawing you wish to reproduce, making sure that the width and height are in the same proportions as the width and height of your screen.

Divide your screen into squares by drawing a grid of convenient size (perhaps every 20 pixels (see diagram). Designer users should "count out" the required number of pixels in magnify mode.)

Draw a grid with the same number of squares within the rectangle on the original picture. It is then a fairly simple matter to transfer the drawing, square by square, to the grid on the computer. Once again you can draw your grid on clear acetate if you don't wish to damage the original picture.

When using a grid on-screen, you should draw it in the colour which will be used least in the finished drawing. A grid is not usually suitable for drawings in Mode 2.

Factor system

A third method is to work out the factor by which the original must be increased or decreased; let us say that it is 0.8. You then measure the coordinates of key points in the picture and multiply each by 0.8 (a calculator can be very useful here). These points can be plotted on the screen, and the remainder drawn in free-hand.

You could, of course do the whole thing free-hand, but this is rarely satisfactory except for landscapes where accuracy is not particularly important.

You can use two basic styles of drawing. In the first, areas of different colours will be outlined in black, as in a child's colouring book, and subsequently filled in. This produces a cartoon-like result which is quite attractive, though not especially realistic. It can be used to good effect for medieval subjects where you can double-up on the outlines to suggest stained glass.

In the real world, objects are not surrounded by black lines, and though a line of black here and there can give depth to the picture, the aim, when drawing our car, will be to produce a more photographic effect, for which you need to know how to add a stipple fill, and what happens when two different stipples are adjacent.

Colour control

Choose a palette of bright white, black, bright red and yellow. With a background of white, draw a large rectangle in red, and fill it in the same colour. Using a yellow pen, draw a line from the middle of the top of your rectangle to a point somewhere in the middle of it, and a second line from there to the lefthand side.

Zoom in to check that the lines do go right to the edge. Fill the upper left-hand quarter of the rectangle in yellow, then, in similar manner, construct a black rectangle in the lower right-hand quarter.

Save at this point, then experiment with filling each of the four sections with a different stipple, observing what happens where two stipples meet, and how this changes if you reverse the colours in one of the stipples. Generally, where two stipples share a common colour, you should avoid having two pixels of that colour together on the dividing line.

Wrong	Right
ABACBC	ABABCB
BABBCB	BABCBC

Where there is no common colour, keep the dark and light colours in each stipple in the same relative positions. See what can happen if you first fill the yellow area with a red/yellow stipple, then fill a red area with black and white.

The second stipple will bleed into the last line of red pixels in the first stipple. This could















sometimes be avoided by filling the red area in black or white before stippling the yellow area. But in this case you should draw a single line alongside the first stipple in black ink, stopping one pixel away from the large black rectangle, fill the red area, fill the black line then zoom in to colour that one remaining pixel.

Screen Designer users will often find it easiest to fill an area in one of the stipple colours, then zip up and down the diagonals in the other colour in magnify mode, except where there are very large areas to fill.

When you have mastered the principles of stipple fills you are ready to start your drawing. Remember the most important rule of all – to save your work at frequent intervals.

Never, ever, draw for more than an hour without saving. You'll never get over the frustration of losing a whole evening's work if a sudden thunderstorm momentarily interrupts the power supply. If you don't have without a disc drive saving can be rather tedious, but do it anyway – you can always make another cup of coffee.

Pick a picture. All my examples refer to the car shown here, but you could use any car picture. Clear the screen. If your car is red you could retain the same palette (leaving a contrast colour for the background), or you could change the yellow to pink to give a wider range of shading on the car but less scope for surrounding areas.

With Art Studio you should now create a Pattern File to include the range of shades available, and Screen Designer people can use stipple blocks to draw an on-screen colour key.

Change the border colour, or draw a black line right round the edges to show the available drawing area. Screen Designer will already have a blue border.

If you found a suitable sized picture, you should trace just the main outlines onto your sheet of acetate, then attach it to the screen with blue-tack or sticky tape, with the car in the centre of the screen.

Key features

If the size needs to be changed, use one of the methods (grid or coordinates) described in last month's article. As my photograph was approximately quarter screen size, measurements only needed to be doubled, so I used the coordinate method throughout.

Start by drawing in key features such as windscreen, headlights, radiator grill and number plate (Picture I), before drawing and filling the body in red (Picture II).

Screen Designer users will find straightforward plotting rather better than line drawing for the outlines, and should check very carefully for gaps before attempting a fill, while, in Studio, it is best to use elastic or continuous line draw, and fills are not a problem, since they can easily be undone.

Don't worry too much if the shape is not absolutely correct, since it is easy to make minor alterations at a later stage. Pick out parts of the car which can be dealt with as separate units these can either be outlined and detail added later (lights), or all the drawing of a particular part may be completed before moving on (off-side wheel).

Look carefully at the car in your picture. Although you know that it is a uniform red/maroon, you will notice that, because it is shiny, it picks up reflected light from the sky, and surrounding objects, so that colours on the bodywork range from almost black to palest pink. It is by reproducing these areas of light and shade that the car will cease to look like a cardboard cut-out and will gain substance.

Don't attempt to draw in all the areas in a particular shade at the same time. Work, rather, on a specific part such as the bonnet (Picture IV), completing the main shading there before tackling the next section.

Although the position of small items (mirrors, sidelights and so on) may be marked (Pictures IV and V), any detailed drawing of these should be left until the main shading on the body has been completed.

It may be necessary to isolate an area by drawing it in an (incorrect) contrast colour (radiator/bumper) before starting work on it (Picture III)

On my car, single pixels were not sufficiently small to draw all the vertical lines on the radiator. When this happens, just draw in as many as you can the general effect will be surprisingly satisfactory (Picture V).

Continue to add shading, using temporary contrast lines where needed (Picture VI). When the main part of the car is finished, you should decide if you intend to put in any background. I have used solid red for the garage doors to emphasise the maroon of the car, but, had it been a red car, I would have avoided using red in the background, even if it did mean painting the doors a different colour.

Remember that things seen through the car windows will appear less bright and clear (Picture VII).

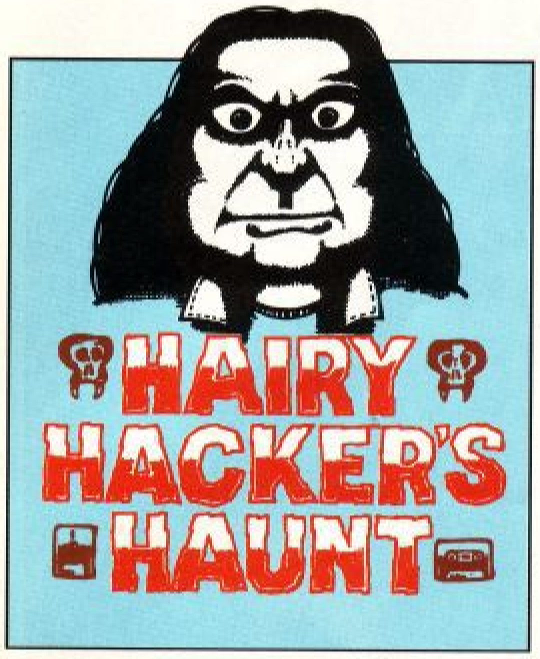
For speed I used pattern fills for the doors and brick walls, with sprays added to suggest foliage (Picture VIII). Ground areas have been filled with various simple patterns to suggest shadowed areas, and rough ground.

Now those small items such as mirrors can be completed, and some re-drawing of detail (tax disc and Daimler logo) and body shape (contour of offside rear body) may be necessary. If you left headlights, indicators, fog-lamps in outline, put in shading (Picture IX).

Get up and view your picture from the other side of the room. If some areas are not clear, the addition of one or two black lines may improve the appearance, and if you drew a line round the picture area, check that this has not been "sprayed over" in places (Picture X). Do remember to save before making any radical changes at this stage.

You can't expect to produce a picture with a lot of detail in a couple of hours, so now is the time to go get the rest of the family to see what kept you quiet for so long. I hope they'll be impressed.

● *Next month I'll deal with ways to improve your pictures, use of some of the more sophisticated features of Advanced Art Studio adding and improving text, and how to get the best results when printing out your work.*



Germ of a good idea

The Hairy Hacker continues in his quest to rid games of vile villains with a little help from the odd infinite lives poke

DUE to a rodden code, dis month's Hairy Hackers is done on location in front of the fire, wrapped up in a king-size duvet, with a mug of hot lemon and Scottish panacea by my side. It would also do well to be sponsored by Kleenex at the moment. Sod these artificial red noses for comic relief, I've got the genuine article.

Also hanging around, and trying to dive into the fire rather than stand the excitement of being published in this column, are two fat wadges of mail, last month's and this month's. Some of it is amusing.

One anonymous person, for instance, has discovered that by doing random calls he can make the screen on his 464 go all funny and make a noise that isn't affected by the volume control. Furthermore, this can't be stopped unless you hit the on/off switch.

Well, matey, most programmers out there will by now have noticed the symptoms of a SEVERE CRASH. The funny noise is probably coming from the monitor, and though it might not be doing much harm, if there are any unnoticed faults in your monitor it won't be doing it a lot of good either.

The guy is anonymous due to the fact that Bruno the bestial kitten has taken the letter for a very short walk. I will now simultaneously imbibe some Scottish cold cure and chastise a kitten.

Most of the other letters concern the Arkanoid poke from the Christmas edition which got a bit fluffed up (not my original words there) in the process of typesetting. Apparently all the zeros in the data got replaced with "fl"s for no apparent reason, and end of lines ended up hyphenated (any illuminations ed? Suit yourself). I would like to point out that this cock-up had absolutely nothing to do With "Mighty Joe" Garner, who's printout came to me in perfect nick.

Well, just to make sure that we've got it right this time, on the bottom of the opposite page is the actual printout as supplied to the Hairy Hacker by Mighty Joe. Anything you can't cope with now is therefore your own problem.



The same again

It's strange, but an identical listing with identical typesetting mistakes appeared in another CPC magazine not long ago. Thanks to Jason Brooks for spotting this one while writing his own pokes. Of which, more later. First, a measure of medicinal ethanol.

Ha, a letter from Oz. Nice to know that someone has had some time to write a letter with all these 200th birthday parties going on. Anyways, G'day Chris Brown of Australind, Western Australia (wife says Hi back).

Heard of a place down there called Thursday Island? Well, steer clear of getting hurt down there, 'cos my Mum's a nurse in that part of the world. Still, Chris has just written his first poke, and by way of encouragement, here is his version of Sweevo's World pokifier:

```
10 'Chris Brown's 1st poke
20 '  17/12/87
30 ' Sweevo's World
40 MEMORY &159D
50 LOAD "!SWEEVO.BIN",&3040
60 POKE &9EC8,&FF
70 CALL &AB2F
```

There, y'are, 255 lives. Keep you busy for a while, or at least through Orgasmatron on your Motörhead album. Also, cobber, the star that is round my neck on the better sketches of me is not

a star of David. That has six points, mine has five. It's a sort of, er, good luck charm. Nice try though. Time for a sip of Highland Cholic Relief I think.

CP/M off the rails

And from the other end of the world, to the other end of England. Burnage in Manchester in fact. Mr. M. J. Lyons (BA PGCE) has written in, to test the ol' grey matter about CP/M 'n' stuff. The first question is about formatting funny tracks on a CPC.

Well, unlike the user number, which is only one



byte, the format of a disc is a bit more involved. When you format a track, you have to specify ALL the sectors you wish to write, and also the order in which you wish them to be written.

So this scuppers your plan of just twiddling one variable and starting the tracks at a different sector number, though it is possible to force a standard format along these lines.

The way to select a format of your own is to first find the Format Track command. To do this you look for the KL–FIND–COMMAND, and look for a command with the single character #86 as its name. You call the address and rom this gives you with HL pointing to a header buffer, E containing the drive number (0 for A:), and D with the track number.

The buffer contains one four byte entry for each sector, the bytes containing (in this order) the track number, the head number the sector number and (sector size) log2 – 7.

To read or write one of these new sector numbers you need to look for command #84 or #85 to read or write respectively. HL points to a buffer for data transfer, E has the drive number as before, D the track number and C the sector number.

Though you might be able to figure out what to do from this description, I wholeheartedly recommend a copy of the DDI 1 Firmware Manual, or the Complete Firmware Guide if you plan to do this sort of thing seriously.

Time for another sip of the ol' medicinal compound, I think. Why does it remind me of aftershave?

Jason Brooks is a star

Ah yes. The rest of Jason Brooks' letter. Well, he was kind enough to send in a tape with four programs on it, and this is they. To be fair, he'll get his tape back, and another one to keep it company.

First, we have The Plot. As with all these pokettes, the object of the exercise is to run them and then insert the rewound games tape. Checksums aren't on here, due to the chop-and-change methods used in the poke. Besides, you wouldn't stuff a 15 line program would you? Anyway, infinite health is just what this country needs at the moment. Social comment, a bit political. My name is not Ben Elton, goodnight:

```
10 ' THE PLOT CHEAT By J.Brooks
20 ' Infinite Health
30 MEMORY &2000:MODE 0
40 BORDER 26:WINDOW #0,3,18,4,6
50 DATA 26,0,13,12,20,25,9
60 DATA 10,1,2,4,7,16,15,3,6
70 FOR i=0 TO 15:READ a:INK i,a:NEXT
80 LOAD"!plot.bin",&3FC9:CALL &3FC9
90 LOAD"!inter1.bin",&2B80
100 LOAD"!inter.bin",&C000:POKE &DC62,
    0
110 CALL &EB78
```

Next, a classic example of what happens to people who enter the political scene unprepared. Ballbreaker. 255 or infinite lives, and the same with missiles. Just chop out the line you don't want. The choice, my friends, is yours:

```
10 ' Ball Breaker Pokes by J.Brooks
20 MEMORY 29999:LOAD"!a",30000
30 POKE &75C6,&80:POKE &75C7,&BE
40 i=&BE80:' Leave out pokes not neede
   d
50 READ a$:IF a$="GO!" THEN CALL 30000
60 POKE i,VAL("&"+a$):i=i+1:GOTO 50
70 DATA 3e,FF,32,1d,28
80 ' 255 missiles
90 DATA 3e,FF,32,22,28
100 ' 255 bats
110 DATA af,32,1e,29,32,d8,28
120 ' Infinite men
130 DATA af,32,bd,1e
140 ' Infinite missiles
150 DATA c3,40,00,GO!:' leave this LIN
    E
```

The least said about Goonies the better. But then, 255 lives and starting on any level has got to have something for it, hasn't it?

```
10 ' Goonies Cheat By Jason Brooks
20 MEMORY &3000:LOAD"!
30 POKE &39E2,&C3:POKE &39E3,&1F
40 POKE &39E4,&BE:i=&BE00
50 READ a$:IF a$="goonies" THEN CALL &
   BE14
60 POKE i,VAL("&"+a$):i=i+1:GOTO 50
80 DATA F3,DD,21,00,BF,11,4F
90 DATA 00,CD,67,BB,21,2C,BE
100 DATA 22,4D,BF,C3,00,BF,21
110 DATA 40,00,E5,21,00,BB,E5
120 DATA C3,B7,39,3E,45,32,4B
130 DATA 00,3E,99,32,4E,00,F3
140 DATA F1,C9
150 DATA 3E,01,32,3E,46:'Start Room
160 'alter 01 for start room between 0
    1-08
170 DATA 3E,FF,3r,5F,46:'255 lives
180 DATA C3,00,46,goonies:'leave this
    line
```

Last one from the Jason Brooks collection tonight is for Asterix and the Magic Cauldron. This gives you 255 men, 255 hams (or infinite either of 'em), a choice of how many pieces of cauldron to collect, and which room you start in. I

```
1 REM'arkanoid poke: infinite lives
2 REM'copyright J.P.Garner (Mighty Joe) 1987
3 REM'biggie this. as always lines 100-999 inclusive need not be included but 10
00 must be
10 FOR a=&45 TO &45+37:READ b$:POKE a,VAL("&"+b$):NEXT a
11 DATA 06,0c,21,00,1,11,00,c0,cd,77,bc,21,00,08,cd,83,bc,cd,7a,bc
12 DATA 21,ac,09,3e,cd,77,23,3e,70,77,23,3e,00,77,23,c3,00,08
13 FOR a=&100 TO &10B:READ b$:POKE a,VAL("&"+b$):NEXT
14 DATA 41,52,4B,41,4E,4F,49,44,2E,42,49,4E
20 FOR a=&70 TO &70+9:READ b$:POKE a,VAL("&"+b$):NEXT
21 DATA 21,f3,c2,3e,64,77,21,00,c0,c9
100 FOR a=&80 TO &80+19:READ b$:POKE a,VAL("&"+b$):NEXT
101 DATA cd,83,bc,21,10,1,11,46,41,7e,a7,fe,ff,c8,12,13,23,c3,89,00
110 POKE &45+36,&A0:POKE &45+37,0
120 FOR a=&A0 TO &A0+17:READ b$:POKE a,VAL("&"+b$):NEXT
121 DATA 21,e4,09,3e,cd,77,23,3e,80,77,23,3e,00,77,23,c3,00,08
130 FOR a=&110 TO &110+46:READ b$:POKE a,VAL("&"+b$):NEXT
131 DATA 48,41,43,4b,45,44,20,42,59,20,54,48,45,20,4d,49,47,48,54,59,20,4a,4f,45
132 DATA 2e,20,54,48,45,20,53,43,45,4e,41,52,49,4f,20,49,53,20,50,4f,4f,4f,ff
1000 CALL &45
```

Mighty Joe's Arkanoid poke



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am an age old (well, not that old) fan of Asterix, so my tape is going to get a bit worn with this poke:

```
10 ' Asterix and The Magic Cauldron
20 ' Pokes by JASON BROOKS
30 MEMORY &9FFF
40 LOAD"!",&A000
50 POKE &A039,&80:POKE &A03A,&BE
60 ' Leave out pokes not required
70 i=&BE80
80 READ a$:IF a$="ASTERIX" THEN CALL &
   A000
90 POKE i,VAL("&"+a$):i=i+1:GOTO 80
200 ' Pieces of cauldron to collect (0
   7)
210 DATA 3e,07,32,77,25:' Change the 7
220 ' No men ALTER 'FF
230 DATA 3e,FF,32,d1,23
240 ' Inf. Men
250 DATA af,32,11,27
260 ' No. of Hams Alter FF
270 DATA 3e,ff,32,00,24
280 ' Inf. Hams
290 DATA af,32,41,26
300 ' Alter start screen (Change 2D)
310 ' To a number between &01 and &2d
320 DATA 3e,2d,32,e9,23
330 ' Do not remove this line
340 DATA c3,00,0a,ASTERIX
```

I'm prone to think we ought to give you some sort of reward for this little lot, so tell us what sort of games you want, and the Ed'll sort out something for you. In other words, you get a Hack of the Month Award Number One (see later for number two).

Ahh. A vitalising slurp of electric soup. Now then, James Kelteringham of Norwich has written in with the passwords for the different levels in Saboteur:

1 – No code.
2 – JONIN
3 – KIME
4 – KUJI KIRI
5 – SRIMENJITSU
6 – GENIN
7 – MI LU KATA
8 – DIM MAK

By the way, James, the letter gets addressed to dear SIR, got it?

Pokes from Adam Todd

Adam Todd has written in with more programettes. Remember him a couple of months ago? Wrote half the column? Yes? Good. Well, here he is with Toadrunner, Knight Lore, and Curse of Sherwood. Actually, I think we've done Knight Lore before, but Adam certainly deserves the encouragement. *(Did Knight Lore? Cliff Lawson had it hung drawn and quartered in August 1985, back issues still available.)*

```
5 REM Toad Runner
10 MEMORY &7FFF:TOT=0
20 FOR B=&8000 TO &802F
30 READ A$:C=VAL("&"+A$)
40 POKE B,C:TOT=TOT+C:NEXT B
50 IF TOT<>&1509 THEN PRINT "ERROR":EN
   D
60 CALL &8014:RUN "!AS"
70 END
80 DATA F5,E5,3E,18,32,6E,4B,C6,70,32
90 DATA 38,BD,CD,37,BD,E1,F1,C3,1E,BB
100 DATA 21,00,80,11,32,BF,01,14,00,ED
110 DATA B0,21,C3,32,22,1E,BB,3E,BF,32
120 DATA 20,BB,EE,14,32,38,BD,C9
```

OK, must rewind the Toadrunner tape to the start, run that little lot, and press play. This gives you enough lives and energy to last for 75 Toad time units, that is if you don't get toadally bored and abort before that. You won't lose all your lives when you take the wrong entrance, you just go back and try another.

I will now take the unprecedented step of awarding the Second Hack of the Month Award (this'll get me in trouble with the Ed!), number one and number two having no reflection on the standard of programming. Both are very high (flattery will get you more copy).

Brief pause for a slurp of some anti-freeze, and we'll move on to the Knight Lore pokette. Most of you out there have probably got a Knight Lore tape somehow, and for those of you with the originals, this little pokeyette will give you slightly more lives than your average cat:

```
5 REM Knight Lore
10 OPENOUT "D":MEMORY &10E6:TOT=0
20 FOR B=&10E7 TO &10FF
30 READ A$:C=VAL("&"+A$)
40 POKE B,C:TOT=TOT+C:NEXT B
50 IF TOT<>&993 THEN PRINT "ERROR":STO
   P
60 LOAD "!":CALL &10F7:END
70 DATA ED,6B,66,11,ED,63,88,25,21
80 DATA 70,25,36,0A,C3,00,A0,21,E7
90 DATA 10,22,58,11,21,FF,AB
```

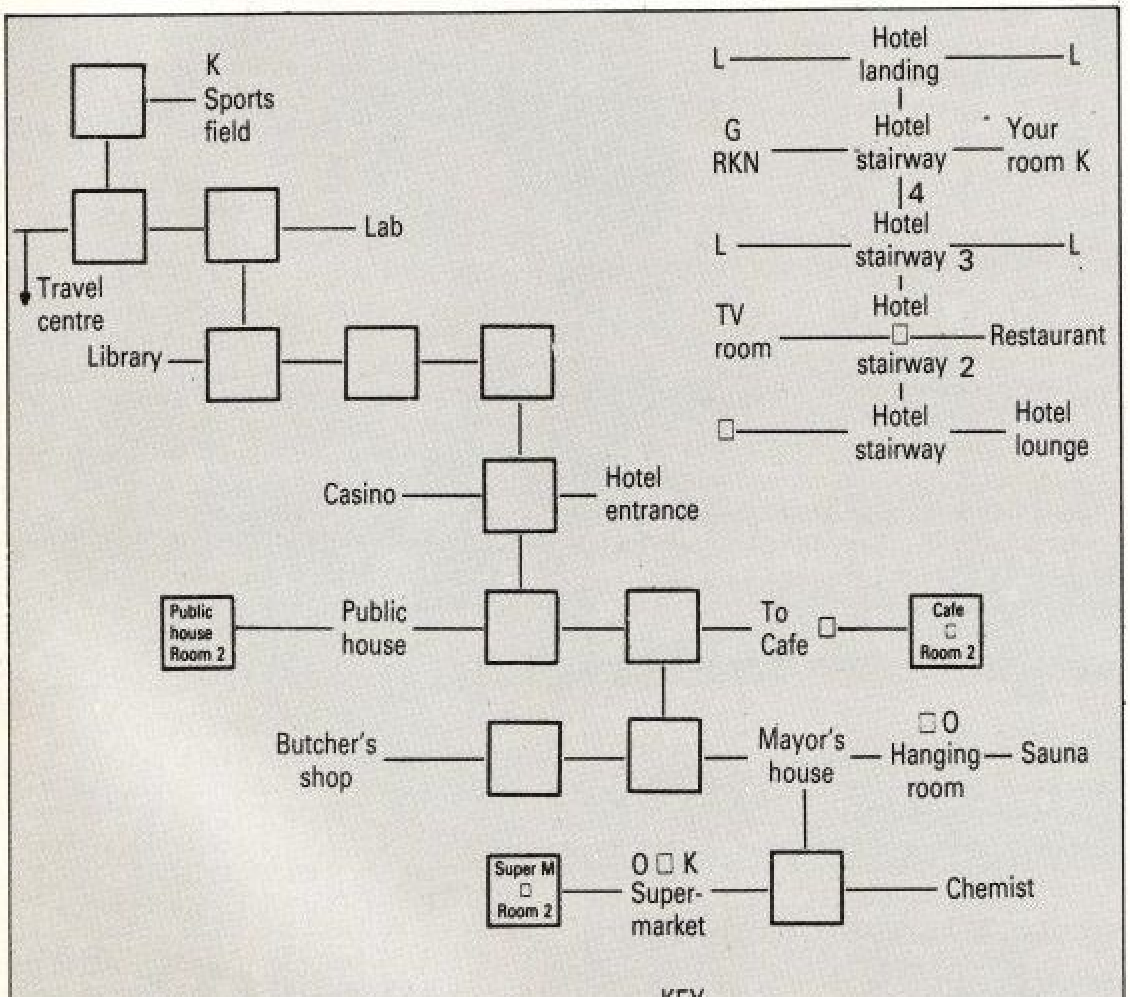
If you want to improve on this and add more lives, you'll have to alter the memory locations &570 and &58B, as the program compares both of them and they must be the same when using this program.

Have at thee, varlet. Ye merrie curse of Sherwood hath been hacked as if by ye broadsword:

```
5 REM Curse of Sherwood
10 MEMORY &1323:TOT=0
20 FOR B=&BE20 TO &BE2F
30 READ A$:C=VAL("&"+A$)
40 POKE B,C:TOT=TOT+C:NEXT B
50 IF TOT<>&774 THEN PRINT "ERROR":STO
   P
60 LOAD"C.O.S.2":CALL &BE20
70 DATA 21,7E,A7,7E,32,5F,67,F6
80 DATA C0,21,93,60,77,C3,0A,AA
```

You only get the nine lives, which isn't so bad as you can now only lose them in the swamp.

Next one off the Todd production line is a pokeykins for Corridor Conflict. Never played it



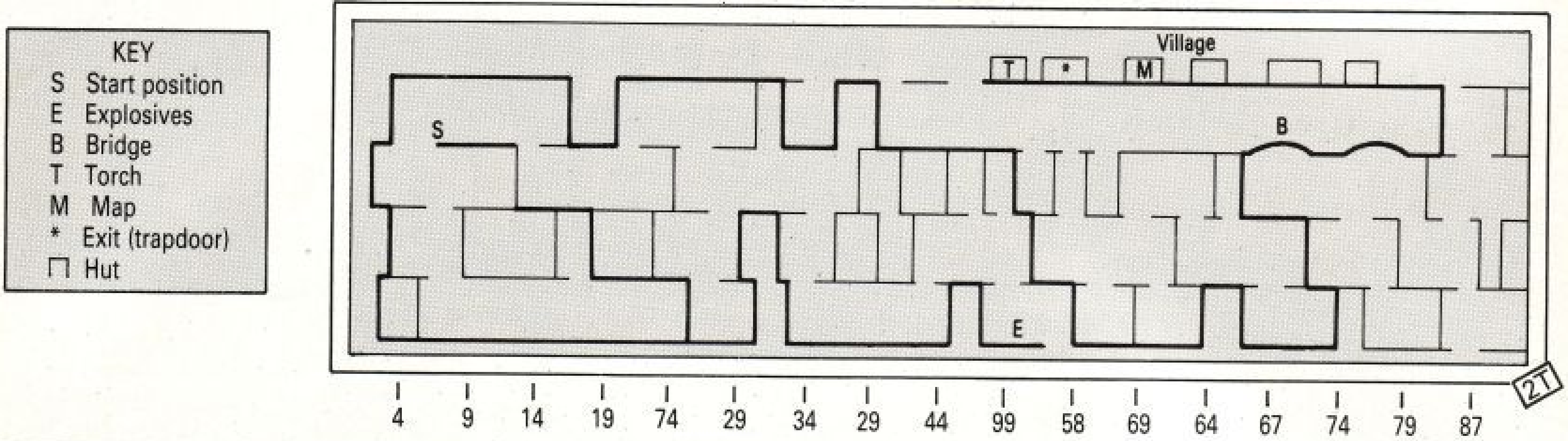
KEY

O=Clothes	□=Food	TO=Tin Opener
S=bed to sleep in	Res=Restaurant	L=Locked
G=Guest room	K=Key	RKN=Red key needed to open door

Bulldog's Streaker
mapped by Matthew Smith

PLATOON

MAP FOR SECTION 1



myself, but no doubt I'll come across it eventually:

```
  5 REM Corridor Conflict
 10 MEMORY &9FFF:TOT=0
 20 FOR B=&A800 to &A828
 30 READ A$:C=VAL("&"+A$)
 40 POKE B,C:TOT=TOT+C:NEXT B
 50 IF TOT<>&15B7 THEN PRINT "ERROR":ST
    OP
 60 CALL &A816:RUN"!":END
 70 DATA F5,E5,AF,32,69,20,32,F5,2C,F6,
    88
 80 DATA 32,38,BD,CD,37,BD,E1,F1,C3,72,
    BB
 90 DATA 3E,C3,21,72,BB,77,AF,23,77,EE,
    A8
100 DATA 23,77,C6,03,32,38,BD,C9
```

That lot'll give the likes of you unlimited bullets, thus rendering it possible for you to stand a chance of beating the computer. Not so with this Terra Cognita poke though, Alan has managed to fix it so that the first run has absolutely no droids or other shooting things in the way. This is too easy. So next time around, you only have six lives and immunity to droids only. Collect your fuel and extra lives as you go:

```
  5 REM Terra Cognita
 10 MEMORY &7FFF:TOT=0
 20 FOR B=&8000 TO &8067
 30 READ A$:C=VAL("&"+A$)
 40 POKE B,C:TOT=TOT+C:NEXT B
 50 IF TOT<>&2D01 THEN PRINT "ERROR":ST
    OP
 60 CALL &804C:RUN"!":END
 70 DATA 3E,21,32,AE,17,32,59,1F,ED,7B,
    CF,05
 80 DATA C3,A1,04,F5,E5,21,FC,13,3E,32,
    77,EE
 90 DATA C7,23,77,E6,05,23,77,EE,3B,23,
    77,3E
100 DATA 02,23,77,C6,C7,32,59,1F,32,AE
    ,17,32
110 DATA 6F,18,CB,87,CB,B7,32,38,BD,EE
    ,4B,32
120 DATA 99,20,21,00,BF,22,9A,20,CD,37
    ,BD,E1
130 DATA F1,C3,BC,BC,21,00,80,11,00,BF
    ,01,4C
140 DATA 00,ED,B0,21,C3,0F,22,BC,BC,3E
    ,BF,32
150 DATA BE,BC,D6,14,32,38,BD,C9
```

Well done Alan, I'll see if the Ed can spare any more stuff for you.

What would the ol' haunt be without a few well coded lines from Justin Garvanovic? As Romeo is to Juliet, bread to is butter, knife is to cut it with. And Justin is to pokes.

First up, infinite lives, fuel and shield for Alternative Software's Combat Zone (tape)

```
 10 MODE 0:BORDER 0:MEMORY 12345
 20 tot=0
 30 FOR i=0 TO 15:READ n
 40 INK i,n:NEXT i
 50 FOR n=&BE00 TO &BE15
 60 READ a$:a=VAL("&"+a$)
 70 POKE n,a:tot=tot+a
 80 NEXT n
 90 IF tot<>2051 THEN PRINT"UT! Theres
    something wrong in the data.":END
100 LOAD "!mentor.bin",&C000
110 LOAD "!",&A300
120 CALL &BE00
130 DATA 00,26,03,06,15,19,24,20
140 DATA 18,09,10,01,02,23,13,10
150 DATA 21,09,be,22,57,a4,c3,00
160 DATA a3,af,32,cf,08,32,d6,08
170 DATA 32,99,02,c3,40,00,4a
```

Next Justin? A poke which provides infinite time, shield and energy for Incentive's Driller (disc) – the adventurers' arcade game. Follow on screen instructions.

```
 10 MODE 1
 20 tot=0
 30 FOR n=&80 TO &B6
 40 READ a$:a=VAL("&"+a$)
 50 POKE n,a:tot=tot+a
 60 NEXT n
 70 IF tot<>4784 THEN PRINT"UT! Theres
    an error in the data.":END
 80 INPUT "Insert DRILLER disc and pres
    s enter ",a$
 90 CALL &80
100 DATA 21,b5,00,cd,d4,bc,79,22
110 DATA 64,00,32,66,00,21,00,01
120 DATA 5d,55,0e,41,df,64,00,21
130 DATA a0,00,22,3d,02,c3,00,01
140 DATA af,6f,67,32,37,67,32,55
150 DATA 67,22,f3,6b,22,86,6d,32
160 DATA b0,68,c3,9f,48,84,4a
```

Road hogs watch out! Infinite time for Elite's Buggy Boy. Works with either tape or disc.

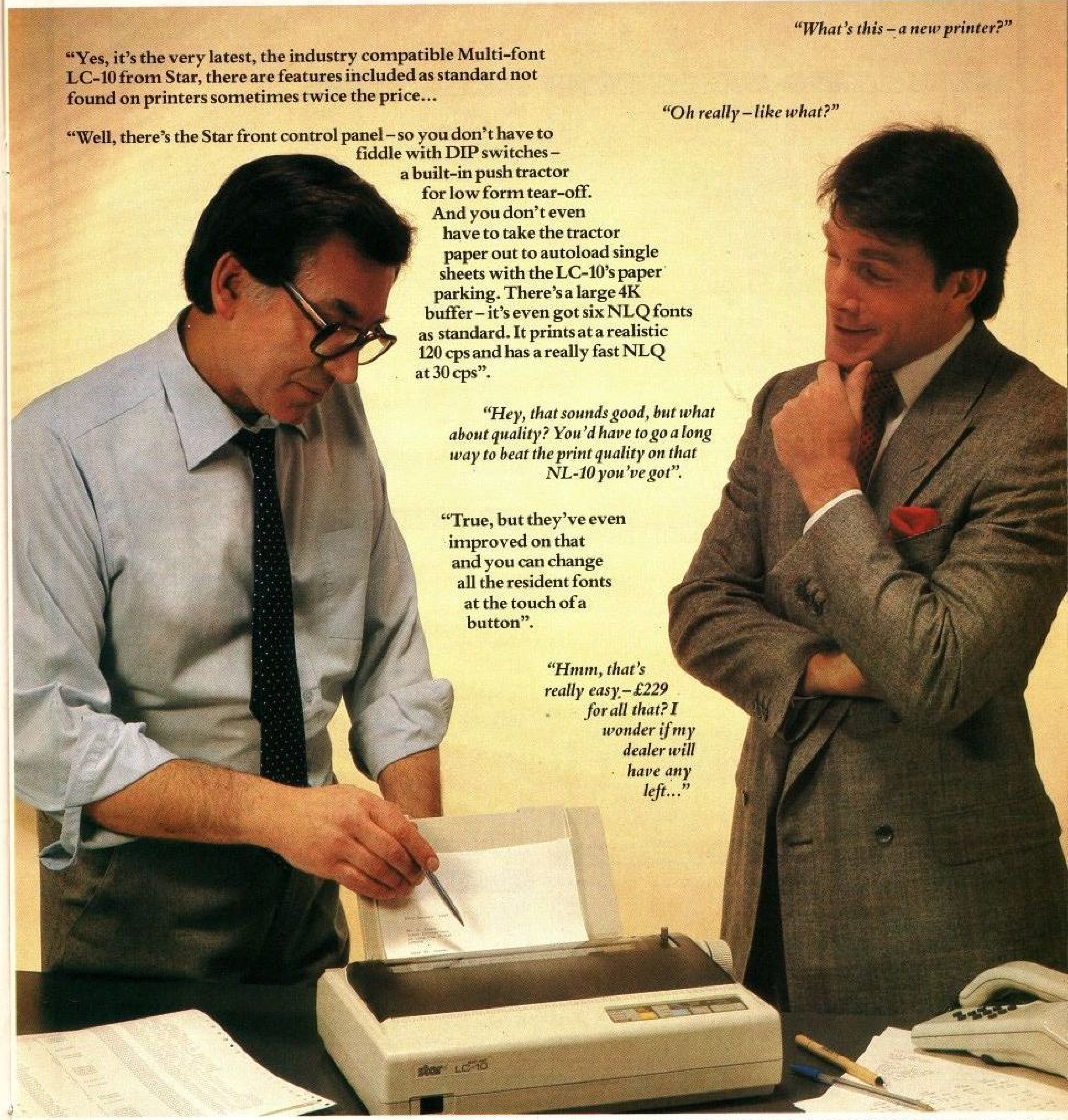
```
 10 MODE 1:MEMORY 12345
 20 tot=0
 30 FOR n=&9C00 TO &9C16
 40 READ a$:a=VAL("&"+a$)
 50 POKE n,a:tot=tot+a
 60 NEXT n
 70 IF tot<>2281 THEN PRINT"OH BUGGY! t
    heres an error in the data.":END
 80 LOAD "buggy"
 90 IF PEEK(&9B00)=&11 THEN CALL &9C00
100 POKE &9C04,&75
110 CALL &9C00
120 DATA 21,09,9c,22,7e,9b,c3,00
130 DATA 9b,3e,c9,32,7f,5e,c3,88
140 DATA 4c,4a,55,53,54,49,4e
```

JG's final contribution offers infinite lives and infinite time for Hewson's excellent Anarchy, a game which should hit the number one chart position if there is any fairness in the world.

```
 10 ' Anarchy. (c) Justin for ACU
 20 MODE 1:MEMORY 12345
 30 tot=0
 40 FOR n=&BE00 TO &BE37
 50 READ a$:a=VAL("&"+a$)
 60 POKE n,a:tot=tot+a
 70 NEXT n
 80 IF tot<>6037 THEN PRINT"Theres an e
    rror in the data lines.":END
 90 LOAD ""
100 CALL &BE00
110 DATA 3E,C9,21,0E,BE,22,6D,A2
120 DATA 32,70,A2,C3,00,A2,3A,64
130 DATA BF,FE,CB,20,06,CD,80,01
140 DATA C3,3D,BF,21,24,BE,22,A5
150 DATA 01,C3,80,01,3E,C9,32,D5
160 DATA 38,32,E1,48,3E,E7,32,FB
170 DATA 48,32,1C,49,C3,00,80,4A
```

So that's it for this month then. As I sit here sniffing I'd just like to say that whoever said "Time is a great healer", obviously hasn't seen the show. OK. Finito. The end. No more. All gone. Sniff! Well, I'll just have a bit more Hibernian cough cure. Blast! Bottles empty. Suz!

"£229 for all that?"



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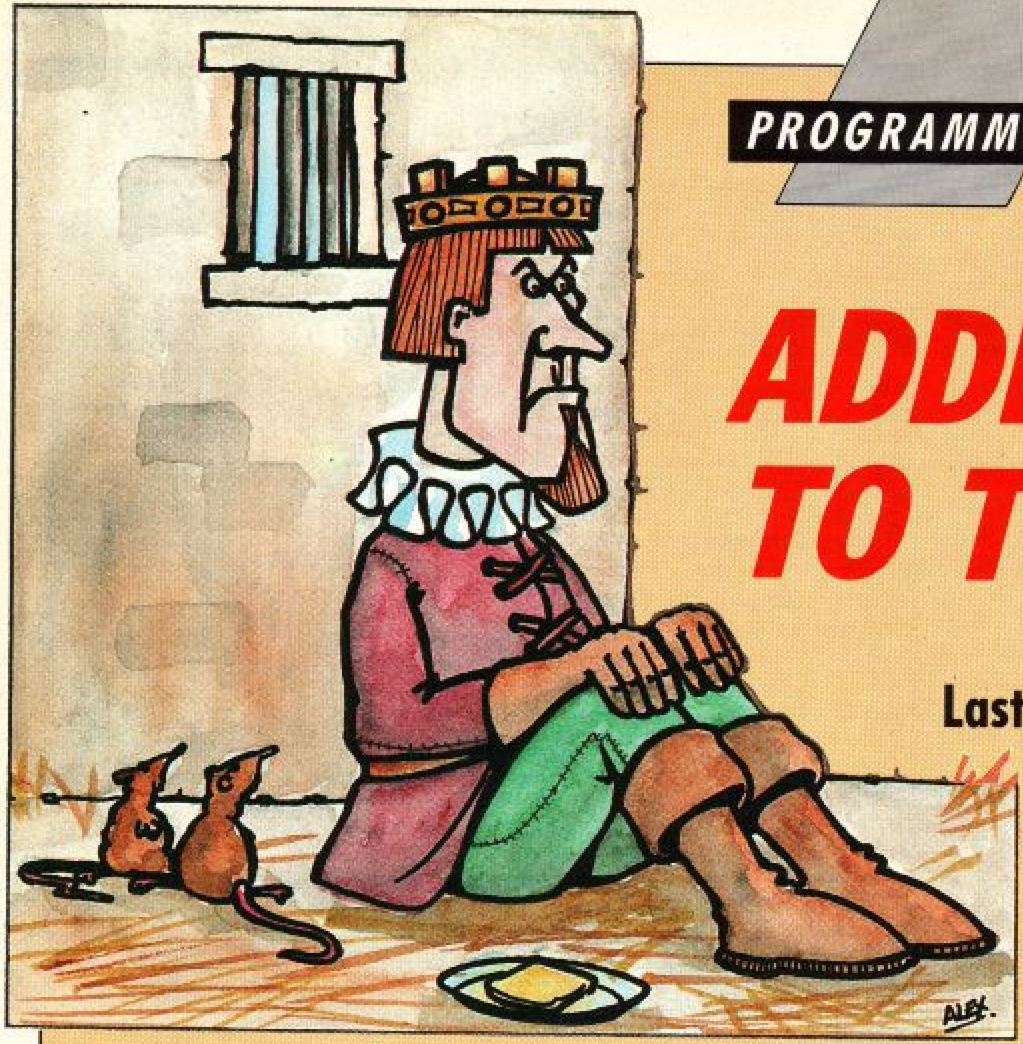
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GALLUP SOFTWARE CHART

Pos	Move	Title	Comment	Last month	Market strength
1	Non-mover	**Out Run** *Sega-US Gold* 9.95	Nice car, shame about the game. All hype and no playability. Handling would have Enzo fuming. Pretty graphics but otherwise a disgrace for Probe.	1	100
2	Up	**The Way of the Exploding Fist** *Ricochet* 1.99	The karate game which started it all. IK+ is better but this is a cheap bit of computer history.	RE	87
3	Up	**Grand Prix Simulator** *Code Masters* 1.99	Why buy Super Sprint when this is better and cheaper? Why buy this when Jet Bike Simulator is so very much better? Not long for the charts now that Code Masters have many better games.	4	75
4	Up	**Trap Door** *Alternative* 1.99	Berk, Druk and Boney star in a game which is a firm favourite with the Rawlins family. Great animation but tricky to play. Not just for kids.	16	74
5	New entry	**3D Starfighter** *Code Masters* 1.99	Billed as the first shoot-em-up from the Olliver twins, a surprisingly deep budget title with solar systems to navigate and convoys to defend.	NE	64
6	Down	**Pro Ski Simulator** *Code Masters* 1.99	A poor showing for Codemasters. Surprising that this is their chart-topper. It's not a particularly good game.	3	61
7	Down	**Magnificent 7** *Ocean* 9.95	Actually eight games. Head over Heels, Cobra, Short Circuit, Frankie goes to Hollywood, Arkanoid, Wizball, The Great Escape and Yie Ar Kung Fu.	2	52
8	Down	**Match Day II** *Ocean* 8.95	This sets new standards of realism in football games with the diamond deflection system. Full cup and league tables. Ace playability. Ritman's greatest.	5	52
9	New entry	**LA Swat** *Mastertronic* 1.99	Patrol the streets, watch out for muggers and terrorists, shoot to kill but try to avoid innocent bystanders. Bit like N. Ireland really.	NE	51
10	Down	**Dizzy** *Code Master* 1.99	Budget Sorcery. Not exactly the Darlings' finest hour. Sometimes price doesn't matter. In this case two quid can be better spent elsewhere.	8	50
11	New entry	**Jet Bike Simulator** *Code Masters* 4.99	Put money on this hitting the number one spot. The most playable racing game on the CPC. Great courses, top notch collison detection. Extra tape, stickers and posters are gimmicks.	NE	49
12	Up	**Popeye** *Alternative* 1.99	Big sprites and cute story make this Don Priestly game which was originally sold by DK'Tronics, an appealing game.	14	47
13	Down	**BMX Simulator** *Code Master* 1.99	A totally RAD game for those with a penchant for pedalling. Jump the ramps, race a friend. GO FOR IT. Been around a long time and still a fave.	7	45
14	New entry	**Tank Busters** *Firebird* 1.99	One of Liz's faves. Written by Design Design, a wire frame battlezone style. Best played with the lights off.	NE	40
15	Down	**Star Wars** *Domark* 9.95	The game of the game of the film. Top notch conversion of the Atari arcade classic. Pilot an X wing through tie fighters and towers to destroy the Deathstar.	13	40
16	Up	**Ghost Hunters** *Code Masters* 1.99	Early Ollivers spritey game. Well liked but beginning to look a little dated now.	RE	39
17	New entry	**Combat Zone** *Alternative* 1.99	Mode 1, vertical scrolling guns and bombs Xevious style, shoot-em- up. Written by "The Firm". Competent.	NE	39
18	Down	**Soccer Boss** *Alternative* 1.99	You too can be Captain Bob Maxwell, control the whole first division if you like. No options to buy teams from rock stars though. Simple but absorbing.	17	36
19	Up	**Super Robin Hood** *Code Masters* 1.99	Ladders and platforms in Ye Olde Forrest of Sherwoode. Complete the quest for Marion's heart. Written by the Ollivers.	RE	36
20	New entry	**Skate Rock Sim** *Ricohet* 1.99	Bubble Bus programmed Mode 0 game. All skate and no rock. See the review this issue.	NE	35

Key: Non-mover — Up — Down — New entry



ADDING FLESH TO THE BONES

Last month Pat Winstanley showed how to build the skeleton of an adventure program. Now the time has come to add rather more substance to the structure

HERE we will write the routines which will turn into a real adventure game. Don't forget to save your "skeleton" separately as it can be used over and over again in exactly the same way to create countless different adventures.

The game we're about to write is short and simple, yet it incorporates examples of most of the features found in commercially produced games. This is how it goes:

You have been captured by a rival lord and thrown into a cell in his castle. Your task is to escape and rejoin your friends in the forest.

Order of play

1. Escape from cell by giving a coin to the guard. Attract him into the cell by knocking on the door.
2. Pass rival lord without being spotted by wearing the blanket and rope to disguise yourself as a monk.
3. Leave castle via the bedroom window using the knife and sheets. The guards must be lured from the guardroom so that you can get the knife.
4. Evade pursuit by crossing the open plain on horseback, wearing a helmet.
5. Join loyal band in forest to complete the game.

Load in the Skeleton program from last month then alter line 230 to read:

```
230 FOR loop=1 TO numberofobjects: REA
    D objtxt$(loop): READ objloc(loop)
    : READ objlng$(loop): NEXT
```

The objlng$(x) array will hold longer descriptions of objects for use with "examine".

Also alter line 1050 to read:

```
1050 ON verb GOSUB 590,590,590,590,590
     ,590,1700,1800,1900,2000,2100,220
     0,2300,2400,2500,2600,2700,2800,2
     900,3000,3100,3200,3300,3400,3500
     :RETURN
```

This gives a list of the line numbers where we will be putting the various verb subroutines later. We are also going to add meaningful data now, so delete lines 2280 to 2760 then type in Listing 1. Having done that we can look in detail at how our sample game is constructed.

Before going any further, look at line 3230. Don't worry about what it does for now, simply note the words used as variables. These are checked at various points during the game. Each will hold 0 when the game is first run signifying false but as the game progresses that value will be changed to 1 signifying true.

The only game variable which can hold a value greater than 1 is movecounter which is loaded with the value 6 when the guards are lured from the guardroom, and is then decreased each turn until it holds zero. Thus movecounter is true when it holds a value between 1 and 5 but false when it holds 0.

All the other variables can only be either 0 or 1. If they ever hold any other value you've slipped up somewhere.

At any point during play pressing the Escape key twice will allow you to check the state of the variables by typing something like "PRINT dogsfed" which will print on the screen the value

System variables	Returns	Notes	System variables	Returns	Notes
room$(x)	text	Text of room 'x'	objfound	number	1 to 'numberofobjects'
room	number	–2 to 'numberofrooms'	numberofverbs	constant	25
numberofrooms	constant	16	verb$(x)	text	Text of verb 'x'
d$	text	Text of all six directions	verb	number	1 to 'numberofverbs'
mvtab(a,b)	number	Room reached from 'a' via 'b'	word$(x)	text	Word being considered in parser
mvflag	number	Move possible = 1, no move = 0	user$	text	Player's command
numberofnouns	constant	15	comm$	text	Copy of player's command
noun$(x)	text	Text of noun 'x'	tempn	number	Temporary pointer
noun	number	1 to 'numberofnouns'	pointer	number	'x' for word$(x)
noun2	number	1 to 'numberofnouns'	a$	text	Word being considered in parser
numberofobjects	constant	9	numberofmessages	constant	19
objtxt$(x)	text	Text of object 'x'	m$(x)	text	Text of message 'x'
objloc(x)	number	Location of object 'x'	carried	number	1 to 'numberofobjects'
objlng$(x)	text	Long description of object 'x'	worn	number	1 to 'numberofobjects'

Figure I: Skeleton variables

held in that variable. Assuming you haven't changed any of the lines of the program, typing CONT will put you back in the game where you left off.

For a summary of all the variables used see Figures I & II.

A quick look round

Once you've finished the laborious task of typing it's time to check that everything is where it should be and that all the connections between various rooms are in the right place and go the right way.

There are six distinct sections to the playing area. The cell the castle interior generally, the guard room, the castle wall, outside the castle and the forest.



As things stand you can't move from one section to another without playing the game through, but to check that the map works without trying the rest of the game – which will probably have a few typing errors anyway at this stage – simply set the value of room in line 70 to the place you want to start.

If during testing you want full access to the "kill-you-off" rooms simply pop in a rem statement between the line number and the rest of the condition in lines 450 to 482 – but don't forget to take them out again later, or the game won't work.

Check that all the objects are in the right places (see the map) and that you are carrying the coin and the penny. Once that's done we can start to look at how the system works and how routines are developed to create the gameplay.

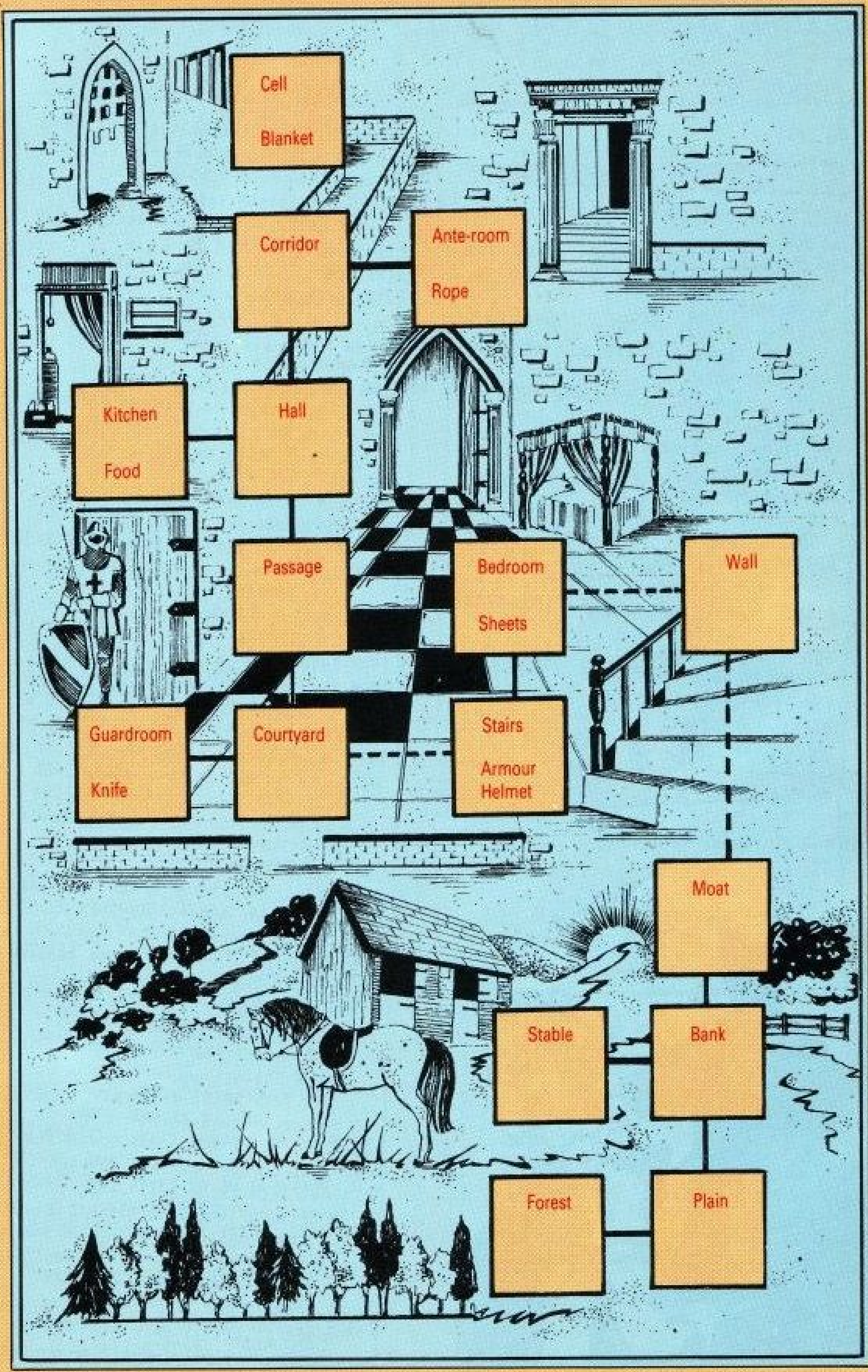
System routines

The most common routines used in any adventure are those concerned with getting and dropping objects. Once you understand how these work any other coding should be simply a matter of applying the underlying theory to different situations, since most games involve the manipulation of objects in various ways to solve problems.

So we'll look in detail at GET, DROP, WEAR, REMOVE and INVENTORY first before examining

Game variables	Returns	Notes
disguised	0 or 1	Rope AND blanket worn if = 1
movecounter	0 to 6	Moves 'til guards in room 9
guardsout	0 or 1	Guards not in room 9 if = 1
dogsfed	0 or 1	Food given if = 1
riding	0 or 1	Player mounted if = 1
knifeincrack	0 or 1	Knife in crack if = 1
sheettied	0 or 1	Sheet tied to knife if = 1
guardhere	0 or 1	Guard in cell if = 1
dooropen	0 or 1	Cell door open if = 1

Figure II: Game variables



the more specific conditions for the game. You might like to add these routines to your original skeleton to save rewriting them for your own game.

The position of a particular object is described by the expression:

objloc((object number))

This will return a number between –2 and numberofrooms. To change the position of an object all we need do is change that number which is held in the array. Thus to have an object carried by the player we would use:

objloc((object number))=–1

To place the object in, say, room 13 we would replace the –1 by 13. A useful variable in this respect is room, which holds the number of the room the player is currently in, so objloc(3)=room would put the food in our game into the location of the player (that is bring it to the player).

In our listing, line 2110 handles acquiring any moveable object in the game. Since we have numbered the objects to correspond with the nouns which describe them, the value "noun" means the object which has the same number as the noun that was typed.

So line 2110 asks whether the object typed by the player is in the same room as the player, and if so, changed the value in objloc(noun) to be –1 (that is, carried).

Line 1810 does exactly the same thing but in reverse, checking to see whether the object is carried, and if so changing the variable objloc(noun) to be the number of the room the player is in. The messages are irrelevant to the action of the game, and serve merely to tell the player what is happening.

The wear routine at line 3500 is slightly more complex, as it must check, not only the availability of the object, but also whether it is wearable.

I have deliberately grouped wearable objects to make this simple. Assuming the object is wearable line 3510 checks to make sure it is being carried, then changes the value held in the variable objloc(noun) to –2 (that is, carried).

The remove routine at line 3000 is exactly the same as the drop routine except that the object is moved from worn to carried, rather than carried to here.

● *That's all we have room for this time. Next month we will cover the rest of the system routines and see how the game is coded.*

LISTING I

```
195 DIM objlng$(numberofobjects)
265 CLS
450 IF objloc(7)=-2 AND objloc(8)=-2 T
    HEN disguised=1:REM rope & blanket
     worn
451 IF objloc(7)<>-2 OR objloc(8)<>-2
    THEN disguised=0:REM rope OR blank
    et NOT worn
452 IF room=5 AND disguised=0 THEN PRI
    NT m$(5):END
460 IF movecounter>0 THEN movecounter=
    movecounter-1
461 IF movecounter=0 THEN guardsout=0
462 IF room=9 AND guardsout=0 THEN PRI
    NT m$(5):END
470 IF room=13 AND dogsfed=0 THEN PRIN
    T m$(16):room=14:GOTO 270
480 IF room=16 AND riding=0 THEN PRINT
     m$(17):END
481 IF room=16 AND objloc(9)<>-2 THEN
    PRINT m$(18):END
482 IF room=15 THEN END
620 IF verb=2 AND room=1 AND dooropen=
    1 THEN room=2:PRINT m$(4):GOTO 270
621 IF room=7 AND verb$(verb)="CLIM" A
    ND noun$(noun)="WIND" AND sheettie
    d=1 THEN room=8:GOTO 270
622 IF room=8 AND verb$(verb)="JUMP" T
    HEN PRINT m$(14):room=12:GOTO 270
635 IF verb=17 THEN GOTO 270
1700 REM ::::::::: verb CLIMB ::::::
1710 IF room=7 AND sheettied=0 AND nou
     n$(noun)="WIND" THEN PRINT m$(10)
     ;" m$(11);m$(5):END
1799 GOTO 10000
1800 REM ::::::::: verb DROP  ::::::
1810 IF objloc(noun)=-1 THEN PRINT "Ok
     ay... dropped":objloc(noun)=room
     ELSE PRINT "I haven't got that."
1899 GOTO 10000
1900 REM ::::::::: verb EAT   ::::::
1910 IF noun$(noun)="FOOD" AND objloc(
     noun)=-1 THEN objloc(noun)=0:PRIN
     T "Delicious... you were starving
     .":RETURN
1920 IF noun>0 AND objloc(noun)=-1 THE
     N PRINT "No thank you!":RETURN
1999 GOTO 10000
2000 REM ::::::::: verb EXAM  ::::::
2005 IF noun=0 OR noun > 9 THEN PRINT
     "You see nothing special.":RETURN
2010 IF objloc(noun)=-1 OR objloc(noun
     )=-2 OR objloc(noun)=room THEN PR
     INT:PRINT objlng$(noun):RETURN EL
     SE PRINT "You see nothing special
     .":RETURN
2099 GOTO 10000
2100 REM ::::::::: verb GET   ::::::
2110 IF objloc(noun)=room THEN PRINT "
     okay... taken":objloc(noun)=-1 :R
     ETURN ELSE PRINT "I can't see tha
     t!":RETURN
2199 GOTO 10000
2200 REM ::::::::: verb GIVE  ::::::
2210 IF room=1 AND noun$(noun)="COIN"
     AND objloc(noun)=-1 AND guardhere
     =1 THEN PRINT m$(2):dooropen=1:ob
     jloc(noun)=0:RETURN
2220 IF room=1 AND noun$(noun)="PENN"
     AND objloc(noun)=-1 AND guardhere
     =1 THEN PRINT m$(3):END
2230 IF room=14 AND verb$(verb)="GIVE"
      AND noun$(noun)="FOOD" AND objlo
     c(noun)=-1 THEN objloc(noun)=0:do
     gsfed=1:PRINT m$(15):RETURN
2299 GOTO 10000
2300 REM ::::::::: verb I     ::::::
2310 PRINT "You are carrying : "
2320 FOR x=1 TO numberofobjects
2330 IF objloc(x)=-1 THEN carried=carr
     ied+1:PRINT objtxt$(x)
2340 NEXT
2350 IF carried=0 THEN PRINT " nothing
     ."
2360 carried=0
2370 PRINT "You are wearing :"
2380 FOR x=1 TO numberofobjects
2385 IF objloc(x)=-2 THEN worn=worn+1:
     PRINT objtxt$(x)
2386 NEXT
2390 IF worn=0 THEN PRINT ".....nothin
     g except a few old rags." ELSE PR
     INT "and a few old rags."2395 wor
     n=0
2399 RETURN
2400 REM ::::::::: verb INSE  ::::::
2410 IF room=7 AND noun$(noun)="KNIF"
     AND knifeincrack=0 AND objloc(nou
     n)=-1 AND noun$(noun2)="CRAC" THE
     N PRINT m$(12):knifeincrack=1:RET
     URN
2499 GOTO 10000
2500 REM ::::::::: verb JUMP  ::::::
2599 GOTO 10000
2600 REM ::::::::: verb KNOC  ::::::
2610 IF noun$(noun)="DOOR" AND room=1
     AND guardhere=0 THEN guardhere=1:
     PRINT m$(1):RETURN ELSE PRINT "No
     thing happens.":RETURN
2699 GOTO 10000
2700 REM ::::::::: verb L     ::::::
2710 REM It's simpler to do this after
      the input line... see 635
2799 GOTO 10000
2800 REM ::::::::: verb LOAD  ::::::
2810 OPENIN "save"
2820 FOR x=1 TO numberofobjects: INPUT
      #9,objloc(x):NEXT
2830 INPUT #9,room,disguised,movecount
     er,guardsout,dogsfed,riding,sheet
     tied,guardhere,dooropen,knifeincr
     ack
2840 CLOSEIN:PRINT "Position loaded.":
     RETURN
2899 GOTO 10000
2900 REM ::::::::: verb QUIT  ::::::
2910 q$=""
2920 INPUT "Sure you want to quit (Y/N
     ) ";q$
```





```
2930 IF q$="Y" OR q$="y" THEN END ELSE
     RETURN
2999 GOTO 10000
3000 REM ::::::::: verb REMO  ::::::
3010 IF objloc(noun)=-2 THEN objloc(no
     un)=-1:PRINT "Okay... removed":RE
     TURN ELSE PRINT "You're not weari
     ng that.":RETURN
3099 GOTO 10000
3100 REM ::::::::: verb RIDE  ::::::
3110 IF room=13 AND riding=0 AND verb$
     (verb)="RIDE" AND noun$(noun)="HO
     RS" THEN riding=1:PRINT "Okay...
     you're mounted.":RETURN
3199 GOTO 10000
3200 REM ::::::::: verb SAVE  ::::::
3210 OPENOUT "save"
3220 FOR x=1 TO numberofobjects: WRITE
      #9,objloc(x):NEXT
3230 WRITE #9,room,disguised,movecount
     er,guardsout,dogsfed,riding,sheet
     tied,guardhere,dooropen,knifeincr
     ack
```

```
3240 CLOSEOUT:PRINT "Position saved.":
     RETURN
3299 GOTO 10000
3300 REM ::::::::: verb THRO  ::::::
3310 IF room=7 AND noun$(noun)="ARMO"
     AND noun$(noun2)="WIND" AND objlo
     c(noun)=-1 THEN objloc(noun)=0:PR
     INT m$(6);objtxt$(noun);m$(7);m$(
     8):guardsout=1:movecounter=6:RETU
     RN
3320 IF noun<10 AND objloc(noun)=-1 AN
     D noun$(noun2)="WIND" THEN objloc
     (noun)=0:PRINT m$(6);objtxt$(noun
     );m$(7);m$(9):RETURN
3330 PRINT "You don't have that.":RETU
     RN
3399 GOTO 10000
3400 REM ::::::::: verb TIE   ::::::
3410 IF room=7 AND knifeincrack=1 AND
     noun$(noun)="SHEE" AND noun$(noun
     2)="KNIF" AND objloc(noun)=-1 THE
     N objloc(noun)=0:sheettied=1:PRIN
     T m$(13):RETURN
3499 GOTO 10000
3500 REM ::::::::: verb WEAR  ::::::
3505 IF ( noun<5 OR noun > 9 ) AND obj
     loc(noun)=-1 THEN PRINT "You can'
     t wear that!":RETURN
3506 IF objloc(noun)<>-1 THEN PRINT "Y
     ou haven't got that!":RETURN
3510 IF objloc(noun)=-1 THEN objloc(no
     un)=-2:PRINT "Okay":RETURN
3599 GOTO 10000
10000 PRINT "You can't do that.":RETUR
      N
```

LISTING II

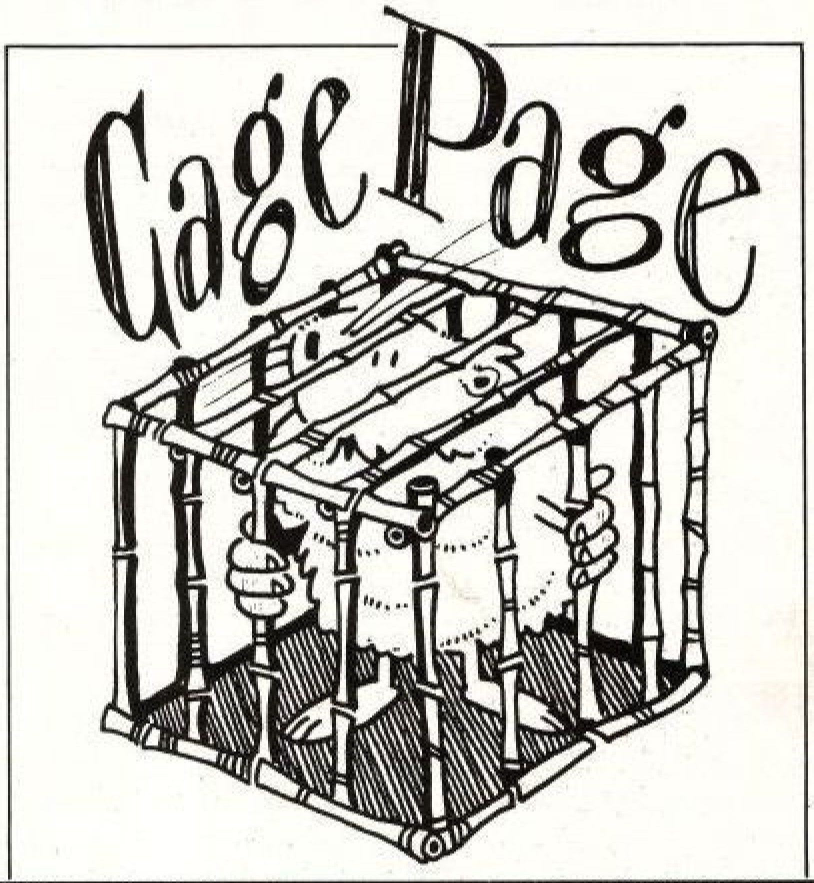
```
22800 REM *****************************
      *
22810 REM           GAME DATA
22820 REM *****************************
      *
22830 DATA "You are in a bare cell wit
      h a stout door.",0,0,0,0,0,0
22840 DATA "You are at the end of a co
      rridor.",0,5,3,0,0,0
22850 DATA "You are in an ante-room, m
      ore of a niche really.",0,0,0,2,
      0,0
```

```
22860 DATA "You are in a filthy kitche
      n.",0,0,5,0,0,0
22870 DATA "In the great hall the Lord
       and his men are feasting. Monks
       scurry hither and thither servi
      ng food.",2,6,0,4,0,0
22880 DATA "This broad passage links t
      he hall and the courtyard.",5,10
      ,0,0,0,0
22890 DATA "The bedroom furnishings ar
      e opulent but there's a crack in
       the stone window ledge.",0,11,0
      ,0,0,0
22900 DATA "Dangling on the end of a s
      heet halfway down the castle wal
      l... the moat is directly below.
      ",0,0,0,0,7,0
22910 DATA "This is the guard room...
      not the safest spot for you.",0,
      0,10,0,0,0
22920 DATA "Horse dung and rotten stra
      w cover the courtyard.",6,0,0,9,
      11,0
22930 DATA "Stone steps spiral upwards
       here.",7,0,0,0,0,10
22940 DATA "You are in the castle moat
      ... it's wet!",0,14,0,0,0,0
22950 DATA "In the stables several hor
      ses eye you hopefully. They look
       starved.",0,0,14,0,0,0
22960 DATA "A pack of dogs stare balef
      ully at you as you stand on the
      bank of the moat.",12,16,0,13,0,
      0
```

```
22970 DATA "You have made it to the fo
      rest and your faithful friends."
      ,0,0,16,0,0,0
22980 DATA "On the barren plain betwee
      n the castle and the western for
      est there isn't an inch of cover
      .",14,0,0,15,0,0
22990 DATA "a coin",-1,"It's made of g
      old."
23000 DATA "a penny",-1,"It's made of
      brass."
23010 DATA "some food",4,"It's just a
      few crumbs."
23020 DATA "a knife",9,"It's blunt but
       strong."
23030 DATA "some sheets",7,"They're si
      lk."
23040 DATA "a suit of armour",11,"Very
       heavy!"
23050 DATA "a piece of rope",3,"About
       a metre long."
```

```
23060 DATA "a blanket",1,"Warm and big
       enough to cover you."
23070 DATA "a helmet",11,"Looks just y
      our size."
23080 DATA "N","S","E","W","U","D","CL
      IM","DROP","EAT","EXAM","GET","G
      IVE","I","INSE","JUMP","KNOC","L
      ","LOAD","QUIT","REMO","RIDE","S
      AVE","THRO","TIE","WEAR"
23090 DATA "The guard comes in to see
      what you want and carefully lock
      s the door behind him."
23100 DATA "The guard grabs the coin a
      nd runs off.... leaving the door
       open."
23110 DATA "The guard is insulted by y
      our paltry bribe and kills you!"
23120 DATA "The door slams shut behind
       you!"
23130 DATA "You are recognised and pro
      mptly recaptured and killed."
23140 DATA "You throw "
23150 DATA " through the window."
23160 DATA "It lands with a big splash
      . The guards come running."
23170 DATA "It lands with a little spl
      ash. Nobody notices."
23180 DATA "You climb through the wind
      ow and fall into the moat making
       a big splash."
23190 DATA "The guards hear the noise
      and come running out from the gu
      ard room."
23200 DATA "You jam the knife into the
       crack."
23210 DATA "You tie the sheets to the
      knife."
23220 DATA "You let go of the sheets a
      nd land in the moat with a littl
      e splash. Nobody notices."
```

```
23230 DATA "The dogs ignore you while
      they eat."
23240 DATA "The dogs come after you an
      d drive you out."
23250 DATA "Mounted guards catch you."
23260 DATA "A hail of arrows kills you
      ."
23270 DATA "You have reached the safet
      y of the forest.... well done!"
23280 DATA "COIN","PENN","FOOD","KNIF"
      ,"SHEE","ARMO","ROPE","BLAN","HE
      LM","GUAR","CRAC","WIND","DOGS",
      "HORS","DOOR"
```



Within Prestel there is an area called Micronet. Within Micronet there is an area called Amster's Cage. Within Amster's Cage is a letters page. Ian Hoare edits this centre of Amstrad activity and presents the latest letters for *ACU* readers.

From MR J H RAWNSLEY

The SBS 3in drive cleaner arrived today. After using it on the drive the cleaning disc is as white as when it arrived. I've had my PCW since Oct 85 so I had expected to see some sign of iron oxide. Maybe these drives really don't need cleaning. I'll continue to use it as I've paid for it, but anyone who does not feel like paying £10 is probably safe not buying one.

● *I have to say that when I asked the disc manufacturers about this they did say it was completely unnecessary.*

From MR S J WALKER

I don't know if this is the first page that has been sent with a Cage Rom but I don't think there can have been many. I have just created this template, so I hope it's the right size etc.

For those of you who have not yet got a Cage Rom, it is to the disc version what a F1 car is to a Minor 1000. Commstar is a horse and cart (with a lame horse).

I notice that one or two characters have been amended between the disc and rom versions, capital S and 4 are two. Also the flash is different. I find that 94 frame stores is a little overwhelming but I have no doubt I will get them all in use sometimes. I certainly found 12 too few, especially with my gallery.

● *It is indeed the first. Glad you are enjoying it. Hope you feel the changes are good. Also glad you managed to make a template OK. It worked perfectly at this end. Tell me, did you find it reasonably easy to create the template?*

From MR I F BEER

What can one say about the Cage Rom that hasn't already been said many times? It's . . . well . . . well it is . . . isn't it? Best £35.50 I ever invested.

● *Blush! Thanks very much, Ian. So glad you're happy with it. Err did you pay £35.50 for it, the price SHOULD be only £34.50 including 1st class post by return. That's what my records show you paid anyway.*

From MR D DORN(DE TEECHUR)

Beginner's area? Well, we already have an excellent CP/M tutorial, but I'm not at all sure that beginners are likely to delve that deep so soon.

So what about bits devoted to the sort of problems that occur with unremitting frequency- 2xLF bug, very basic Basic, using scrolling BBs, economy on Pratsel, what is a rom.

I know you are agin two letters pages in principle, and I understand why. But using two separate systems it is possible, although I agree, at present, more undesirable than otherwise. Maybe other Amsters have a differing opinion that is a page of letters for "comment" and one for the likes of DF's Agony Uncle bit in *ACU*. I dunno!

I know that when I came up to CPCs from Speccies, a lot of my experience came with me, Had the CPC been my first machine, I'm not so sure that I could have achieved what little I have by now. The question remains, is a beginner likely to have the gear, or desire even, to log on to these hallowed pages? Again, I dunno! Or are we entering the era where folks buy their Arnold and get the necessary comms stuff at the same time?

It would be interesting to know how long the Cage populace have been Arnoldophiles, or even computerate. I suspect that we are likely to be condemning the "middle ground" people to beginner status, purely because, I think, we have a very good user base of knowledgeable and experienced users. One thing is certain, the level of support available here, and the user to user advice is unrivalled in any of the Amstrad specific monthlies. Combine the Microbase and Cage, and almost all of the needs of Amsters are met.

From MR S P HUTCHINGS

I'm not sure about a beginner's area. If there was one it might become a "ghetto" because the "experts" might not look at it, so help that is provided on the single area could be lost.

From CHRIS SHELLEY

Having used POKE &a701,229 to examine the erased files on a disc, I saved a program. I forgot to change the USER number back, so I have a program in the erased files area. Trouble is there seems to be no way I can load it back. POKE &a701,229 and then LOAD will not work. Any advice to retrieving it?

● *I would use a sector editor to try to examine the actual sectors on the disc. Utopia will load sectors to ram.*

From DAVID FOSTER

Erased programs area? What computer is Chris Shelley using? When a file is deleted the first char in the directory is changed to &E5, nothing else.

While still active, the char is the number of the User Group, normally 0. Surely the easiest way to get it on to the group he wants is to load CP/M Plus and type PIP A:[g0]=a:filename[gN], where N is the group it is currently on and assuming that he wants it on User (group) 0.

If he has a CPC and Utopia, all it requires is DEDIT and load the directory, change the first char of the file entry to the group he wants and then resave. If it is a file longer than 16k he will need to do the same for the second directory entry.

● *I hope Richard has a CPC, as he's bought a Cage Rom. Thanks for PIP tip.*

From MR A P KEELEY

To load files from USER 229 all you need to do is specify the extension and it will load as normal. No need to use CP/M.

● *So this is a silly question, but why bother to*

➤

write a file to an illegal user number? I know it's done for primitive protection, but why do it to your own files?

From CHRIS SHELLEY

If you remember I was examining USER 229 and forgot to switch back to USER 0 before saving. I think the best thing to do is to re-save it, it is fairly short. It's just a nuisance to, especially if I could easily retrieve the program, which I have so far failed to do.

● *Oh, I see! By making that POKE it is the equivalent of setting I user 229. I still don't see why you can't use a sector editor to edit the directory.*

From M SALLEH & R TOUW

Re CPC664 + CPM Plus.. *ACU* magazine reported that 464 and 664 owners with 64k DK'tronic Rampack and V1.1 Basic rom can buy CP/M Plus for £13.95 from the same company that sells Basic 1.1, namely CPC Limited. I hope all 464/664 owners will start learning CP/M Plus from now on. The opportunity is there, so take it.

● *Thanks, Mohamed. Very good point. In many respects CPM+ is much easier to use than 2.2. It isn't just the larger TPA either.*

From MR A P KEELEY

Instant Access takes about 10k ram. Not all the RSXs are really needed, but unless you doctor the program it's all or nothing. It would be so much more useful on rom.

● *If the program consists entirely of RSXs, they should be VERY easy to put on rom.*

From M J HOWARD

I'm afraid YOU'RE not quite right Ian – the DIR byte you refer to is set to the user number (usually 0 but sometimes not), &E5 acts as an erased flag. Interestingly, if you want to play silly games it IS possible to use user number (s) outside the normal ranges (0-15 for CPM+, 0-31 for CPM 2.2).

● *Absolutely right! Grrrr, I clean forgot cos I always use user 0 except on a Silidisc. Thanks very much for pointing it out.*

From DAVID FOSTER

Nearly right, Ian. Attributes are not only set by setting bit 7 in the filename extension, but also the first four characters of the filename may be used.

Was Eddie's problem of a collection of line feeds really caused by the pin 14 problem, or does he mean that in the middle of a page it does a series of them?

In which case I suspect he has the DIP switches in the printer set to continuous stationery and 11in page length, while the programs are expecting different settings, probably 12in.

I think it would be a shame to split up the letters into beginners and others. The only way to learn is to read and experiment. Even if things don't make sense at the time, read them, make a note and then 10 to 1 someone will say something and the penny will drop and the earlier stuff all makes sense.

From MR K J MANGER

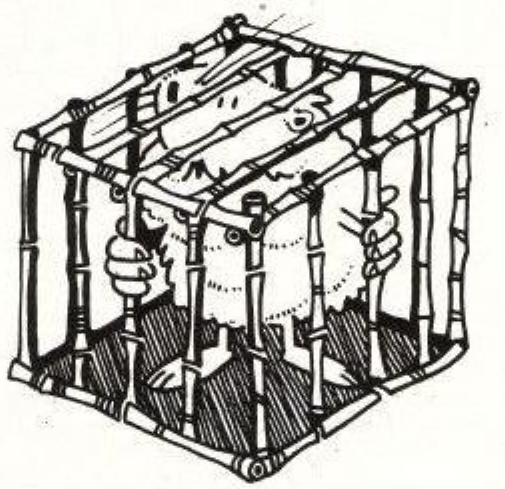
Re Instant Access. It takes 9722 bytes to be exact. I think that also includes the buffer area. If anyone wants a copy and is having trouble locating it, ring Minerva Systems on 0392 37756. I have been using it for some 18 months now and the only problem I have had is I didn't read the manual!

● *Certainly sounds worthwhile, Ken. What do you think of the idea of putting the RSXs into rom?*

From MR K J MANGER

Instant Access On rom? By Gad, Sounds great. How about it Andy, Can you transfer it to your sideways RAM to try it out. I've spent some considerable time trying to work out a way of doing it, mind you, I don't know what I'm doing. I did speak to Minerva some time ago and asked for the source code. They said NO.

● *If you think about roms and RSXs they work in very similar ways. Roms often consist largely of RSXs. (Utopia)*



From JOHN DAVIES

I'm still a beginner but enjoy reading and learning from the Cage learned letters. I feel that if I only talked with other beginners I would learn very little.

● *Thanks for your comments. What would you say to a section of articles aimed at beginners? What subjects?*

From MR C A BERRY ('CB' & CAROLE)

Thanks for explaining better about why erased files are hidden from DIR, but (teehee) you are not quite right either, cos &E5 means nothing in CP/M+. If you'd said £E5 or 0E5H or even the confusing &HE5 for Mallard B, I would let you off (only joking!).

I have been extra lucky in unerasing files so far and Doc should get at least some of his text back even if he has written to the disc since (not if he used the same file name).

● *Thanks, CB, as someone with a CPC, I used the non standard &E5 without any thought.*

From MR T WESTERN

When I read the letters I am most interested, although I am afraid that to me a lot of it sounds like a foreign language. I wonder could we have a section for complete beginners?

Another question I have is who writes the bit at the end of most letters? Finally, I should like to thank you for the help that I have had up to now.

● *Thanks for writing, Terry. Very glad you find them interesting. I am the Ed of the Cage, Ian Hoare. Comments re beginners area, please?*

From Mr C SAWFORD

A pal of mine has been given a Mannesman Tally MT80 printer. Can it be hooked up to a CPC464 or 6128? Does it need an interface or just cable? Could anybody using one MBX me perhaps. Diolch.

● *We had quite a discussion of the use of MT 80 with CPCs and Stop Press. No probs, you just need CPC-to-Centronics cable.*

From MR S J WALKER

I would also support a novice user's section. Can we please start with how to configure and use MEX, so we can get rid of these damned Commstar roms. I have the 1.14 version of MEX, but as a total ding-bat I can't seem to use it.

I wish to use it with a Linnet and therefore I could do with some help to overlay a phone directory. I don't even know how to overlay a file. PS I still hate CP/M.(especially 2.2, as this is what I have).

From MR D C BATHURST

With reference to a beginners' spot, I think it would be a good idea, but time consuming for the author. Anyway an area like Cage is for sharing ideas. I for one don't understand everything I read, but I still look at it every day (well almost). Keep up the good work Ian.

● *Thanks, David. Up to now, I had rather assumed that beginners felt that they could ask beginner type questions here and have a reasonably expert answer! I thought the mix of beginner/expert OK.*

From MR DON HARRISON (HAPPY)

I do not feel that a novice's area is a good idea. Do some people feel that they know so much about the Amstrad now that they never learn anything new from an answer to a question from someone new to the Amstrad? Just remind them

if they want a reply to be very brief or be very very verbose too there's enough room, so more than one frame is needed.

From MR H D WRIGHT

Ref beginners' spot. I like to look at everything even if I don't understand it all. What would help me is an indication of how many letters there are on any one day so that if time is short I know how quickly to browse. Could this be done if others found it helpful?

● *I'll have a think about it, I guess it would fit on the letters index page. What do you feel about that?*

From MR P C MARTIN

Ian. Several points. Having only been on Prestel for two weeks I must admit that I find the Cage a most informative and entertaining area. Have had a couple of MBXs from Malcom Maddock of last week with his SuperCalc2 problems which are now resolved.

This brings me on to the next point following on from the comment on the Cage tonight about PD S/W. During the course of talking to Grafox, the people who wrote the DataPlot prog that I have, I was confronted with the attitude that CP/M is old history and they were only interested in thisDos thatDos, an attitude that I've encountered before.

Does this mean that as they have no further interest in the S/W, or supporting it that they don't mind it going PD?

● *A MOST interesting suggestion. How can we persuade them?*

From MR K P GIBBS

I have a couple of technical programs written for my 6128 that a friend would like to run on his Amstrad PC. Is it possible to convert them reasonably simply? This obviously involves both disc compatibility and also the dialect of Basic.

● *Almost 100 per cent impossible to transfer. The only way might be to save the Basic as Ascii, then transfer via RS232 and then edit to take into account the difference between the dialects. Yeuch...*

From MR D C BATHURST

Error B when using the tape is caused by his tape drive motor being duff. A new one can be obtained for DIY from CPC Ltd on 0772 555034 price £11.12inc P & P/Vat. See *Amstrad Computer User* Dec 87 page 11. Hope that helps, I've got one on order at present.

● *Thanks, David. I should have mentioned that as another possible cause. To be strictly accurate, though, dirty heads or stretched/faulty tape are more common.*

From Doc

I was doing some work tidying up some of my Tasword files on disc and accidentally erased some of them. Is there any way I can get them back?

● *Yes, but before you try, make quite sure that you write NOTHING else to the disc. You'll find there are one or two public domain progs like UNERASE.COM which will do it.*

From BRIAN GAFF

What is the origin of the file extenders and what do the file attributes do to the Ascii value of the 3 chars? Can CP/M format any other sort of drive, like my 80t ds, to take advantage of the extra space?

● *Extenders, dunno. Attributes, each sets bit 7 of one of the letters of the file extension. Yes, but not on Amstrad as supplied. You would have to write code to alter Disc parameter block.. I think.*

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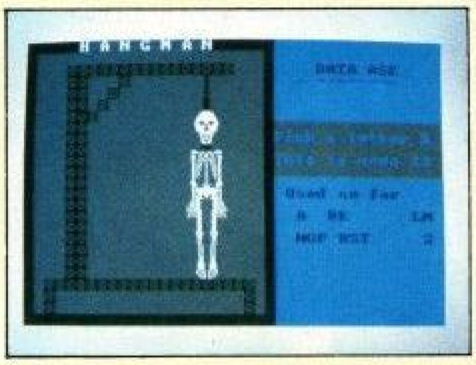
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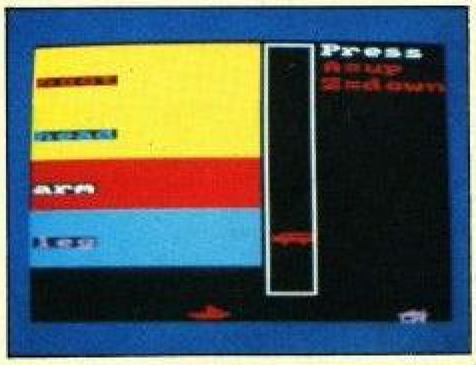
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A374

The alternative budget

If you buy a lot of games you will have noticed the name Alternative Software cropping up increasingly. Norman Doyle went in search of these people

FOR a new, independent company to rise to the top of the charts and hold its own against the likes of Mastertronic, Code Masters and Firebird Silver is pretty remarkable. Alternative Software achieved this without big publicity gimmicks.

What's the secret? Perhaps Roger Hulley, Alternative's MD, can enlighten me.

Pontefract, here I come.

"Alternative's success is mainly due to the sheer addictiveness and variety of the games", was Roger's rather unsurprising answer, "but having a good distribution company is just as important". This is something that he is well qualified to talk about. After all, Alternative is an offshoot of R and R, one of the country's biggest distributors.

Back in early 1986 R and R with its sister company, A1 Primary Distribution, realised that they were perfectly poised to enter the sharp end of games production instead of just being the interface between industry and retailer. So it was that in April of that year two games were launched to test the theory.

Despite inferior packaging – Hulley's own words – Henry's Hoard and Phoenix did well enough to prove the viability of the new company. What it now needed was a corporate image so that Alternative's games would stand out against the opposition. A graphic designer from the Design Council came up with the solution, a punk logo which reflects the modern outlook and sense of fun which pervades the company.

Just before the end of 1986 the new company was ready for launch and titles such as the re-released Henry's Hoard and Howzat! ensured that it was a very happy New Year.

Cheapie oldies

What makes Alternative really stand out is Roger's enterprising attitude to the re-issuing of full-price hits at £1.99. The first one was Red Arrows, a flight simulator based around the display team of the same name, but the list is now growing with awesome speed.

The names of the companies to which Roger has access are legion. Among others, Ocean, Durell, Piranha, Martech, Incentive, Bubble Bus and Domark ensure that titles such as View to a Kill and Split Personalities, Saboteur, Trapdoor and Popeye, Moon Cresta and the Danger Mouse games have all appeared over Christmas.

Martech's Uchi Mata enjoyed greater success as a budget game than it did at full price. When it was originally released its name only conveyed the fact that it was a judo beat-em-up to those who had heard of the uchi mata at judo classes. Merely by adding the name Judo to the title it encouraged prospective buyers to pick it up off the shelf and examine it. Yet another example of Roger's down to earth attitude which he learned in the cut-throat distribution world.

Uchi Mata caused its own special problem when the master tape developed a fault just when sales were reaching a peak. Delacey Duplication, Alternative's in-house production line, had quickly to re-master to keep the supplies flowing, a major problem for a small team who are working flat-out to keep to a tight schedule.

Quick thinking is an essential quality for the high volume output of a major budget software manufacturer.

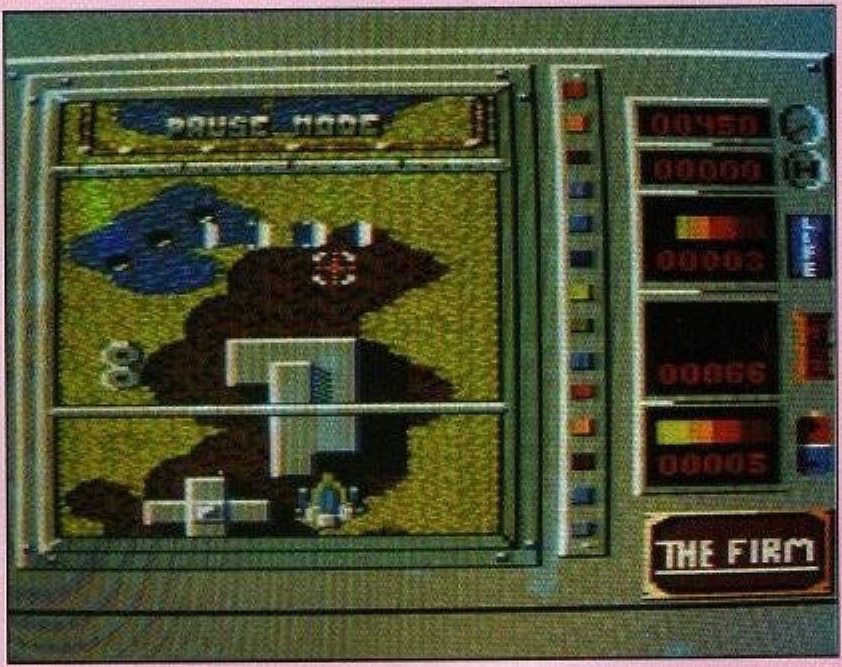
Such is the success of this approach that now one in every 10 games sold bears the Alternative logo. The big name games and bargains like the Triple Decker series – which offer three games for the price of one – have helped to attract attention to the other products which Alternative's team of programmers have produced.

Adventure avenue

Necris Dome's author, Charles Sharp, was one of the first. His Star Wreck proved that this genre of an adventure game doesn't have to involve caves, lanterns and wizards. It also demonstrated that adventures can be funny and the trek across space with Captain J.T. Kake has opened many a mind to the possibility that adventures aren't the preserve of chess fanatics or the Dungeons and Dragons fraternity.

The fan mail poured in after the release of Star Wreck begging Alternative to do another adventure. Football Frenzy was the response, but how was it chosen? "Simply by looking at the response to Soccer Boss. Despite the sales of Addictive's Football Manager, Soccer Boss proved that there is a vast market for games based around football. Whether the market was ready for a football adventure was the gamble we had to take, but it paid off well", claims Roger.

"Our inspiration came from the comic strip football heroes and their trials and tribulations. In



Football Frenzy the player takes on the role of the manager of FA Cup finalists Grimsditch Rangers three days before the Wembley showdown. Everything that can go wrong does and the player has to cope with all these headaches and turn the nightmare back into the dream".

The strategy paid off handsomely once again and W H Smith claims that this is their top selling adventure of all time.

Code creators

The programming team is based in Sheffield, not a million miles from Alligata's offices. In fact the head of the software section is ex-Alligata man Dave Palmer. Fellow defector and the team's Amstrad programmer is 19-year old Richard Stevenson, author of Dead or Alive and producer of Alligata's Amstrad conversions of Trap, Loco and Pub Games. Now enjoying the relative freedom of the Alternative regime, Richard has recently been responsible for Metallix, which incorporates the graphics of in-house designer Nigel Speight.

Richard started out coding Z80 games for the Spectrum for Dollar Soft, a company which had to be fronted by his father when Richard was still a schoolboy. After producing just one game, Bomb Scare, Firebird made a successful bid for the rights and Dollar Soft retreated to sourcing games for other companies.

Living in Sheffield resulted in him being snapped up by Alligata to do Super Sam for their Rhino label. After less than a year with them he has now joined Alternative on a permanent basis along with Dave, Nigel, Steve Evans and Peter Frith.

Alternative has a positive attitude towards Amstrad games, and Richard loves the user friendliness of the machine. "The really great thing about the Amstrad is the fact that conversions to the Spectrum are so easy", explains Richard with an eye to doubling his money in his second role as the Spectrum programmer for Alternative.

On the negative side, the lack of hardware sprites disappointed Richard when the Amstrad was launched. "With such a large screen to scroll around, a few sprites would have made things a little easier".

When it comes to future plans Alternative has a top secret project running at the moment. What it is they won't say, not even a clue, but Richard is obviously very excited about the game and Dave Palmer has promised to keep us in close touch with its progress.

Although the company's major output is re-released material, an active interest is taken in the quality of the product. As an example of their attitude, Roger Hulley used one of his most recent releases. "We've just launched Confusion at £1.99 but it's not the game that originally appeared. We've taken the master, disassembled the code and added a few touches of our own so that the finished product is not only cheaper than the original but also ten times better".

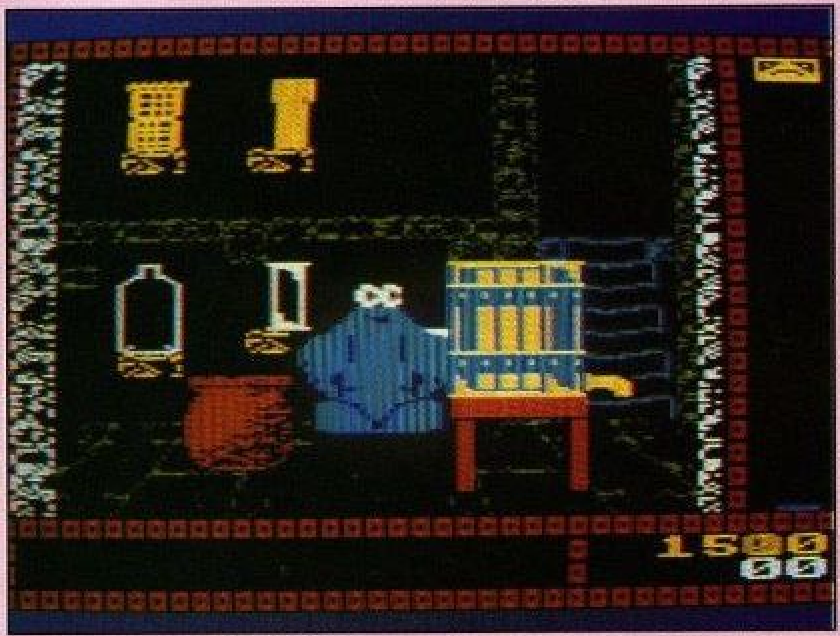
Fun features

Quite a few of the games exhibit a sense of humour, and one of the current projects is a straight send up of one of Roger's keys to success. A game based on a current craze will always capture the attention necessary to turn it into a potential blockbuster. If Ninja warriors or BMX bikes are popular you can expect games based on them to double their sales so why not produce a game based on them both for even bigger sales?

So it was that the idea for BMX Ninja was born! Imagine manly warriors racing from fight to fight on BMXs and you'll soon realise what a whacky game it is in the offing. The joke will be doubled when the game appears in the States because the latest craze is the BMX Ninja, a trick scooter derived from BMX bikes.

Alternative was named to convey the Hulley attitude towards what he considers to be the fairly staid attitude of the budget market where a large percentage of the games are either shoot-em-ups or something simulators. A glance through the Alternative catalogue reveals everything from shoot-em-ups through adventures to the realistic, newly-released Flight Simulator.

Roger and his team want to knock Mastertronic and Firebird and Code Masters off the top of the charts, and they're pulling out all the stops to do it. Whether they will succeed or not, they're determined to have a lot of fun trying.





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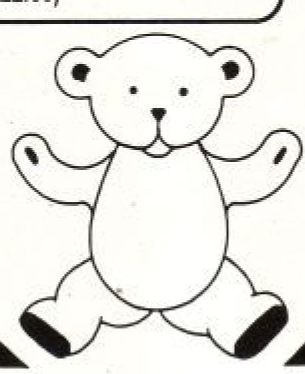
Info-Script has been tuned for simplicity and yet has considerable power. On being loaded, it measures the computer's memory and sets its configuration accordingly. With a DK Tronic's 256k memory the programme can hold about 3000 names and addresses, six pages of text AND the spelling checker with its 30,000 word dictionary all in the memory ready for instant access. It is designed to allow the system to grow with your requirements.

The database can only access one file at a time which is held in the computer's memory but this can be split into four sections, each instantly available at the touch of a key. So, one file of data could contain, for example, 760 customer names and addresses, 290 items of stock and 51 suppliers names and addresses. Each section having its own field headings but all three being treated as one file for loading and saving to disc.

The real power of Info-Script lies in the interchange of data from the database to the word processor. Mail merging is possible at virtually any level of complexity. Create a straightforward letter using the word processor and send the same letter with personalised names and addresses to all of your selection. Or send everyone a different letter constructed from standard patterns where, by using conditional loading and printing, you are only limited by your imagination.

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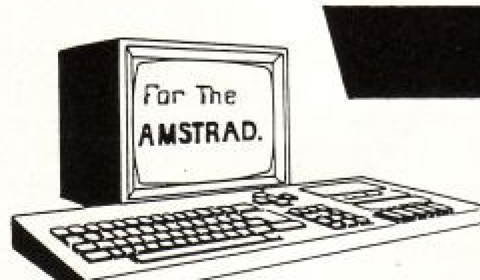
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BrunSpell is the fastest and most convenient CPC spelling checker. Even the 464 version is faster than Prospell on ROM. BrunSpell 464 is supercharged to 1700 words/minute, including dictionary loading time but BrunSpell 6128 is the champion at 2500 words per minute. Brunspell 6128 and the 30,000 word dictionary are loaded at the same time as BrunWord and the total loading time is only 10 seconds. Why be slowed down with Protext/Prospell on ROM!

DataFile

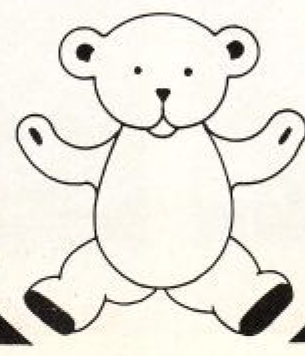
DataFile is specially written to complement BrunWord and is a card filing programme with very fast access. BrunWord justifies the text before printing. Labels, reports, personalised letters – DataFile has unlimited print formats using BrunWord.

How BrunWord Compares

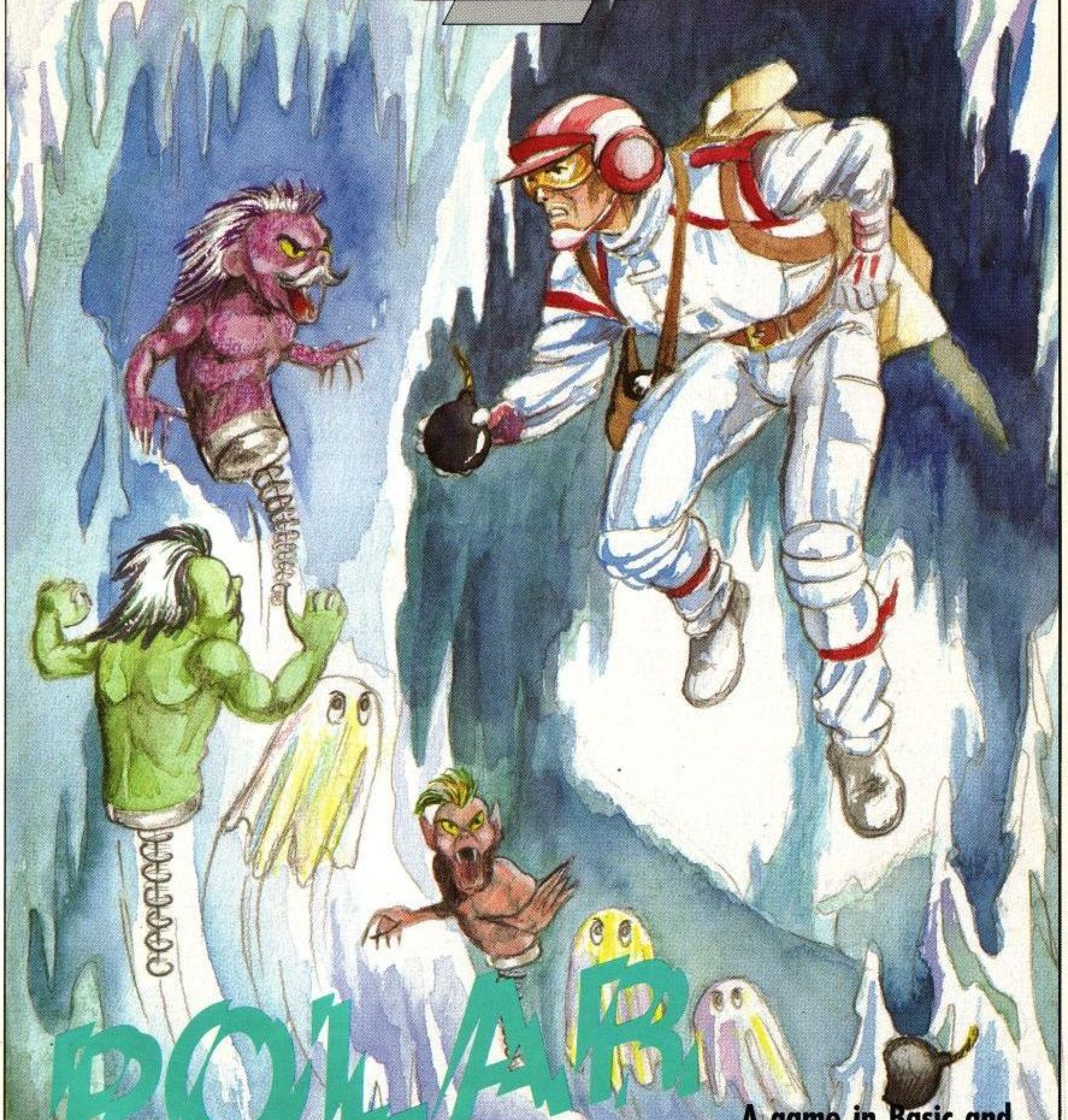
Take as an example the justification process. Tasword uses an out dated method where spaces are added only from the right hand side. This has the effect of making the lines appear to stretch across the page. The Tasword system should be much faster but in fact Tasword takes 19 seconds for a 306 word paragraph while BrunWord takes just 1.5 seconds.

Tas-spell has a similarly disappointing performance. The text of our free booklet was checked by Tas-spell after the 37 unknown words had been saved, and it took a staggering 18 minutes and 31 seconds for the 3455 words. BrunSpell took just 1 minute 21 seconds for the same test.

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POLAR

A game in Basic and machine code by Brian Round

IT'S cold, seriously cold. The temperature is so low that the thermometer reads "continued on the next thermometer". All the brass monkeys have hitched a lift from Monarch Airlines and nipped off to Elait. All you want to do is snuggle down with a cup of hot chocolate and a copy of *ACU* when the alarm bells start to ring.

Some not exactly nice person has planted bombs all over the place, and you've been elected to don the thermals and diffuse them. The caves which need to be de-bombed are cold enough but the subterranean lakes bring new meaning to the term chilly.

Even your dupont kevlar and Bacofoil suit won't protect you from the worst of the cooling liquid. So you'll have to be careful how much time you spend under water.

Many passages contain hidden switches, which open unseen doors and allow you to pass through walls – essential for those impossible looking screens. These start on screen two.

There are, however, further problems. Monsters lurk in the depths below. Only those players fleet of eye and quick of hand will be able to dodge them. Fail and the place blows sky high.

Watch out when picking up bombs. There could be a monster hidden underneath. Don't think that a screen is impossible. Use a bit of common sense and if that fails use a bit of nonsense. Good luck – you'll need it.

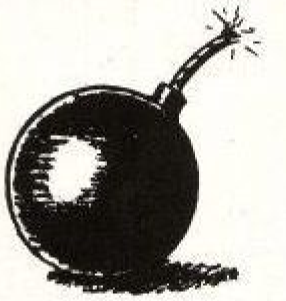
TO ORDER PLEASE USE THE FORM ON PAGE 73

```
1 SYMBOL AFTER 256:MEMORY &9FFF:SYMB
  OL AFTER 32
2 ENV 1,7,-1,50:ENT -1,1,5,1,1,-5,1:EN
  T -2,1,1,10:ENV 2,5,-3,1:ENV 3,15,-1
  ,1
3 DIM rc(20):RESTORE 3:FOR f=1 TO 20:R
  EAD rc(f):NEXT f:DATA 16,9,7,11,7,16
  ,9,9,7,11,16,7,7,6,16,11,6,9,11,9
4 DIM ub$(20):RESTORE 4:FOR f=1 TO 20:
  READ ub$(f):NEXT f:DATA 0,4,3,3,4,0,
  3,4,4,2,3,2,0,5,0,2,2,4,2,0
5 n$="MORPH":HS=3000:GOSUB 66:INK 0,13
  :INK 1,26:INK 2,0:INK 3,20:BORDER 13
6 DIM roo$(20):RESTORE 6:FOR f=1 TO 20
  :READ roo$(f):NEXT f:DATA THE EASY R
  OOM,SWITCH WAY,THE THIRD ROOM(oh no)
  ,WALTER WALL,SWIM FOR IT,TONYS ROOM,
  GAUNTLET??,TRAP DOOR,WAKA WAKA WAKA,
  BREAKOUT,MUNCHEE RESORT,MUNCHEE RESO
  RT II,DINNER,KRYPTON FACTOR
7 DATA FRED THE FRUIT PICKER,MONSTER M
  ASH,COPYRIGHT,1988,BRIAN,COMPENDIUM
8 DIM ali(20):RESTORE 8:FOR f=1 TO 20:
  READ ali(f):NEXT f:DATA 0,0,0,0,0,0,
  0,0,0,1,2,0,1,0,3,1,1,3,2,2
9 DIM axs(20),ays(20):RESTORE 9:FOR f=
  1 TO 20:READ axs(f),ays(f):NEXT f:DA
  TA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
  ,0,1,5,10,5,0,0,7,7,0,0,18,8,11,4,9,
  2,11,8,0,0,5,5
```

```
10 GOSUB 239:GOSUB 243
11 RESTORE 12:DIM bm(20):FOR f=1 TO 20
   :READ bm(f):NEXT f
12 DATA 5,6,4,5,5,2,6,4,6,6,4,5,4,1,6,
   4,4,3,5,1
13 DIM cod(3):cod(1)=&A2CE:cod(2)=&A28
   C:cod(3)=&A184
14 li=3:sc=0:lev=1:px=1:py=1
15 GOSUB 134
16 IF lev=21 THEN GOSUB 192:GOTO 64
17 GOSUB 58
18 MODE 1:CLS
19 bc=bm(lev)
20 ali(20)=2
21 GOSUB 168:GOSUB 175
22 IF lev=3 THEN MID$(sc$,118,1)="0"
23 IF lev=8 THEN MID$(sc$,21,1)="0"
24 IF lev=9 THEN MID$(sc$,66,1)="0"
25 IF lev=10 THEN MID$(sc$,115,1)="0"
26 IF lev=12 THEN MID$(sc$,46,1)="0":M
   ID$(sc$,139,1)="0"
27 IF lev=18 THEN MID$(sc$,71,1)="0":M
   ID$(sc$,74,1)="0":MID$(sc$,11,1)="0
   "
28 x=1:y=1
29 IF lev=18 THEN x=0
30 IF lev=19 THEN x=10:y=5
31 ax=axs(lev):ay=ays(lev)
32 |SPRITE,x*2,y*2,&A142
33 IF ali(lev)=0 THEN GOTO 34 ELSE |SP
   RITE,ax*2,ay*2,cod(ali(lev)):xx=ax:
   yy=ay
34 a=x:b=y:cc=(y*20)+x+1
35 GOSUB 198
36 IF MID$(sc$,cc,1)="4" THEN GOSUB 87
37 IF en<=464 OR MID$(sc$,cc,1)="2" OR
    (x=ax AND y=ay AND ali(lev)<>0) TH
   EN SOUND 132,3000,-1,15,1,1,15:li=l
   i-1:GOSUB 58:IF li=0 THEN GOTO 63 E
   LSE GOTO 18
38 IF MID$(sc$,cc,1)="5" THEN sc=sc+10
   0:GOSUB 57:SOUND 132,59,45,15,2:MID
   $(sc$,cc,1)=ub$(lev):bc=bc-1:IF bc=
   0 THEN GOSUB 71:GOTO 16
39 IF INKEY(67)=0 THEN GOTO 63
40 IF INKEY(le)=0 THEN GOSUB 48
41 IF INKEY(ri)=0 THEN GOSUB 51
42 IF INKEY(up)=0 THEN GOSUB 54:GOTO 4
   4
```

```
43 IF MID$(sc$,(y*20)+x+21,1)<>"3" THE
   N IF y=9 THEN y=0 ELSE y=y+1
44 IF ali(lev)=0 THEN GOTO 45 ELSE ON
   ali(lev) GOSUB 73,77,82
45 |SPRITE,a*2,b*2,&A100+VAL(MID$(sc$,
   cc,1))*66
46 IF ali(lev)=0 THEN GOTO 47 ELSE |SP
   RITE,xx*2,yy*2,&A100+VAL(MID$(sc$,(
   yy*20)+xx+1,1))*66
47 GOTO 32
48 IF x=0 THEN x=19:RETURN
49 IF MID$(sc$,cc-1,1)="3" THEN RETURN
50 x=x-1:RETURN
51 IF x=19 THEN x=0:RETURN
52 IF MID$(sc$,cc+1,1)="3" THEN RETURN
53 x=x+1:RETURN
54 IF y=0 THEN y=9:RETURN
55 IF MID$(sc$,cc-20,1)="3" THEN RETUR
   N
56 y=y-1:RETURN
57 LOCATE 7,22:PRINT USING "#####";sc:
   RETURN

58 MODE 1:CLS
59 INK 0,13:INK 1,26:INK 2,0:INK 3,20:
   PEN 1
60 LOCATE 15,2:PEN 2:PRINT"LEVEL ";USI
   NG "##";lev:LOCATE 10,20:PRINT"LIVE
   S LEFT:":IF li=0 THEN GOTO 61 ELSE
   FOR f=1 TO li:|SPRITE,18+(f*3),18,&
   A142:NEXT f
61 PEN 1:LOCATE 19-(LEN(roo$(lev))/2),
   10:PRINT roo$(lev)
62 FOR f=1 TO 2000:NEXT f:RETURN
63 CLS:FOR f=1 TO 14:LOCATE f,10:PRINT
   " GAME OVER":NEXT f:FOR f=1 TO 500:
   NEXT f:LOCATE 25,10:PRINT "!":SOUND
    129,0,2,7,0,0,3:FOR f=1 TO 500:NEX
   T f:LOCATE 27,10:PRINT"!":SOUND 129
   ,0,2,7,0,0,7:FOR f=1 TO 5000:NEXT f
64 IF sc>hs THEN GOSUB 109:hs=sc
```



```
65 GOTO 14
66 INK 0,0:INK 1,26:PEN 1:PAPER 0:MODE
    1:CLS
67 LOCATE 1,1:PRINT"-CHOOSE NOW AND FO
   REVER HOLD YOUR PEACE-":LOCATE 15,9
   :PRINT"[J] Joystick":LOCATE 15,11:P
   RINT"[K] Keyboard"
68 IF INKEY(37)=0 THEN le=8:ri=1:up=0:
   do=2:fi=9:CLS:LOCATE 13,10:PRINT"Us
   e cursor keys":RETURN
69 IF INKEY(45)=0 THEN le=74:ri=75:up=
   72:do=73:fi=76:RETURN
70 GOTO 68
71 SOUND 129,119,210,7,1,1:SOUND 130,9
   5,210,7,1,1:SOUND 132,80,210,7,1,1:
   FOR f=1 TO 20:INK 1,INT(RND*27):FOR
    q=1 TO 30:NEXT q:NEXT f:lev=lev+1
72 FOR f=1 TO 1000:NEXT f:GOSUB 89:RET
   URN
73 IF MID$(sc$,(ay*20)+ax+1+px,1)="3"
   THEN px=-px:SOUND 130,50,-1,15,3,1
74 IF MID$(sc$,((ay+py)*20)+ax+1,1)="3
   " THEN py=-py:SOUND 130,100,-1,15,3
   ,1
75 ax=ax+px:ay=ay+py
76 RETURN
```

```
77 ax=ax+(INT(RND*3)-1):ay=ay+(INT(RND
   *3)-1):IF ax<0 THEN ax=0
78 IF ax>19 THEN ax=19
79 IF ay<0 THEN ay=0
80 IF ay>9 THEN ay=9
81 RETURN
82 IF ax<x THEN IF MID$(sc$,(ay*20)+ax
   +2,1)<>"3" THEN ax=ax+1
83 IF ax>x THEN IF MID$(sc$,(ay*20)+ax
   ,1)<>"3" THEN ax=ax-1
84 IF ay<y THEN IF MID$(sc$,(ay*20)+ax
   +21,1)<>"3" THEN ay=ay+1
85 IF ay>y THEN IF MID$(sc$,(ay*20)+ax
   -19,1)<>"3" THEN ay=ay-1
86 RETURN
87 '**** DEPLETE ENERGY ****
88 SOUND 129,610-en,1,7,0,0,1:FOR lo=1
    TO 4:en=en-1:PLOT en,40,0:DRAWR 0,
   -8,0:NEXT lo:RETURN
89 GOSUB 87:sc=sc+10:GOSUB 57:FOR w=1
   TO 30:NEXT w
90 IF en<=464 THEN RETURN
91 GOTO 89
92 MODE 1:INK 0,13:INK 1,26:INK 2,0:IN
   K 3,9:PEN 1:CLS
93 LOCATE 1,2:PRINT"                THE
    BALL
    --------                        The
   Ball is a shy creature who likes
    nothing more than to bounce.
         He may look harmless,but if y
   ou          get in his way, RIP."
```

```
94 LOCATE 1,9:PRINT"                THE
   BEE
    -------                         The
   Bee is not so shy,but just as
    deadly.He can fly anywhere at all,
        but doesn't really know where
   he is     going."
95 LOCATE 1,16:PRINT"               THE
    MUNCHEE
    -----------                     The
   munchee,now fed up with chasing
    PAC MAN,has retired on this plane
   t,     and has taken up chasing dar
   ing         young astronauts."
96 |SPRITE,1,4,&A2CE:|SPRITE,1,11,&A28
   C:|SPRITE,1,18,&A184
97 rr=385:GOSUB 104:rr=272:GOSUB 104:r
   r=160:GOSUB 104:GOSUB 105
98 MODE 1:CLS
99 LOCATE 1,2:PRINT"               ANTI
   -GRAV WATER
    --------------                 Do n
   ot touch this if possible.This
    water can be anywhere,and any
         contact with it reduces your
   body        temperature."

100 LOCATE 1,9:PRINT"               BOM
    BS
     -----                            T
    o be collected in order to complet
    e    the levels.When the bomb is p
    icked      up,behind it may be wat
    er,brick or       even an alien."
101 LOCATE 1,16:PRINT"              TH
    E HERO
       --------
    With your trusty jet-pac you take
    on    the challenge of POLAR.But w
    atch out    'its a jungle out ther
    e'.(CLICHE OF     THE YEAR '88)"
102 |SPRITE,1,4,&A208:|SPRITE,1,11,&A2
    4A:|SPRITE,1,18,&A142:rr=385:GOSUB
     104:rr=272:GOSUB 104:rr=160:GOSUB
     104:GOSUB 105
103 GOTO 134
```

Reach the top with . . .

LCL

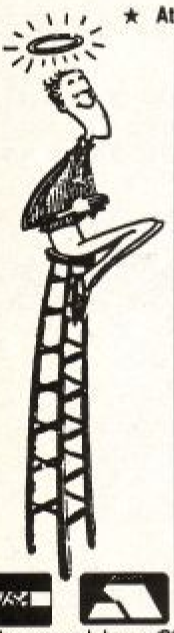
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```
104 PLOT 14,rr:DRAW 639,rr:DRAW 639,rr
    -98:DRAW 14,rr-98:DRAW 14,rr:RETUR
    N
105 LOCATE 10,23:PEN 2:PRINT"ANY KEY T
    O CONTINUE":PEN 1
106 FOR f=1 TO 20:i$=INKEY$:NEXT f
107 i$=INKEY$:IF i$="" THEN GOTO 107
108 FOR f=1 TO 10:i$=INKEY$:NEXT f:RET
    URN
109 '**** HIGH SCORE ****
110 IF sc<=hs THEN RETURN
111 MODE 0:INK 15,26:PEN 15:INK 0,13:C
    LS
112 LOCATE 1,20:PRINT"  Enter Your Nam
    e."
113 V=1:s$="ABCDEFGHIJKLMNOPQRSTUVWXYZ
    .-*!? ":FOR F=0 TO 3:FOR Q=0 TO 7:
    LOCATE 3+(Q*2),5+(F*2):PRINT MID$(
    S$,V,1):V=V+1:NEXT Q:NEXT F
114 N$="            ":V=1:XC=60:YC=336
    :CC=1
115 CO=15:GOSUB 133
116 CO=0:GOSUB 133
117 IF v=13 THEN RETURN
118 IF INKEY(fi)=0 THEN GOSUB 124
119 IF INKEY(le)=0 THEN GOSUB 125
120 IF INKEY(ri)=0 THEN GOSUB 127
121 IF INKEY(up)=0 THEN GOSUB 129
122 IF INKEY(do)=0 THEN GOSUB 131
123 GOTO 115
124 MID$(N$,v,1)=MID$(S$,cc,1):V=V+1:L
    OCATE 5,14:PEN 12:SOUND 132,10,-1,
    15,2,1,5:PRINT n$:PEN 1:FOR x=1 TO
    200:NEXT x:RETURN
125 IF XC=60 THEN RETURN
126 XC=XC-64:CC=CC-1:SOUND 132,xc+100,
    -1,15,2,2:FOR x=1 TO 50:NEXT x:RET
    URN
127 IF XC=508 THEN RETURN
128 XC=XC+64:CC=CC+1:SOUND 132,xc+100,
    -1,15,2,2:FOR x=1 TO 50:NEXT x:RET
    URN
129 IF YC=336 THEN RETURN
130 YC=YC+32:CC=CC-8:SOUND 132,xc+100,
    -1,15,2,2:FOR x=1 TO 50:NEXT x:RET
    URN
131 IF YC=240 THEN RETURN
132 YC=YC-32:CC=CC+8:SOUND 132,xc+100,
    -1,15,2,2:RETURN
133 PLOT XC,YC,CO:DRAWR 40,0,CO:DRAWR
    0,-18,CO:DRAWR -40,0,CO:DRAWR 0,18
    ,CO:RETURN
```

```
134 '**** TITLE SCREEN ****
135 MODE 0:INK 0,0:BORDER 13:CLS
136 LOCATE 1,9:PEN 13:INK 13,26:PRINT"
    --------------------":LOCATE 1,11:
    PRINT"--------------------":PEN 1
137 LOCATE 3,15:PEN 13:INK 12,0:PRINT"
    TODAYS BEST";hs:LOCATE 3,17:PRINT"
    by ";n$
138 d$="POLAR":textx=230:texty=380:GOS
    UB 155
139 GOTO 143
140 INK j,i:i=(i+1) MOD 26
141 j=j+0.5:IF j=9 THEN j=1
142 RETURN
143 re$="xxx":j=1:fl=0:i=14
144 IF re$="xxx" THEN RESTORE 164:READ
    re$
145 LOCATE 1,10:PRINT"
        ":PEN 15:INK 15,0:LOCATE 10-(L
    EN(re$)/2),10:PRINT re$
146 FOR f=10 TO 26 STEP 2:INK 15,f:SOU
    ND 132,0,2,(INT(f/4)),0,0,f/2:FOR
    q=1 TO 4:GOSUB 140:GOSUB 152:NEXT
    q:NEXT f
147 IF fl=1 THEN RETURN
148 IF fl=2 THEN GOTO 92
```

```
149 FOR f=26 TO 0 STEP -2:INK 15,f:SOU
    ND 132,0,2,(INT(f/4)),0,0,f/2:FOR
    q=1 TO 4:GOSUB 140:GOSUB 152:NEXT
    q:NEXT f
150 IF fl=1 THEN RETURN
151 READ re$:GOTO 144
152 IF INKEY(47)=0 THEN fl=1
153 IF INKEY(35)=0 THEN fl=2
154 RETURN
155 text=0:textc=1:TAG
156 FOR textl=texty-1 TO texty-65 STEP
    -4
157 ORIGIN textx,textl,textx,639,textl
    ,textl+2
158 PLOT -1000,-1000,textc:textc=textc
    +1
159 IF textc=9 THEN textc=1
```

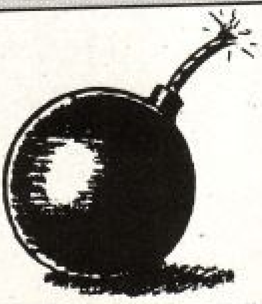


```
160 MOVE 0,text:PRINT d$;:text=text+1
161 NEXT textl
162 TAGOFF
163 RETURN
164 DATA " Welcome to","POLAR"," Wri
    tten by","Brian Round","THE STORY
    SO FAR..."," In the year 2188","On
     the planet POLAR","Bombs were hid
    den","beneath the surface","By unk
    nown enemies."," Your task is"," t
    o collect them."," There are 20 ro
    oms"
165 DATA "Each containing","Upto 6 bom
    bs.","Use your jetpac"," To fly","
    but watch out for"," ANTI-GRAV WAT
    ER!!!"," Hello Morph.","Hit 'I' fo
    r INFO","or","Hit SPACE to play","
    Q to quit game"
166 DATA "PLAYTESTER:-","STEPHEN ROUND
    "," This message"," Will","Repeat
    itself"," Around about"
167 DATA "NOW","xxx"
168 '**** GAME WINDOW ****
169 MODE 1:BORDER 13:PEN 1:PAPER 0:CLS
170 LOCATE 1,22:PRINT"SCORE ";:PRINT U
    SING "#####";sc
171 LOCATE 30,22:PRINT"BODY TEMP"
172 FOR f=464 TO 600:PLOT f,40,3:DRAWR
    0,-8,3:NEXT f:en=602
173 RETURN
174 PLOT cor,340,0:DRAWR 0,6:RETURN
175 '**** PRINT SCREEN ****
176 INK 1,26:INK 2,0:INK 3,rc(lev)
177 RESTORE 219
178 FOR f=1 TO lev:READ sc$:NEXT f
179 ta=1:FOR f=0 TO 9:FOR q=0 TO 19:ch
    =VAL(MID$(sc$,ta,1))
180 |SPRITE,q*2,f*2,&A100+((ch*66)):ta
    =ta+1:NEXT q:NEXT f
181 RETURN
182 MODE 1:CLS:FOR f=1 TO 200:PRINT sd
    (f);",";:NEXT f
183 GOTO 183
184 IF x>0 THEN x=x-1:ta=ta-1
185 RETURN
186 IF x<19 THEN x=x+1:ta=ta+1
187 RETURN
188 IF y>0 THEN y=y-1:ta=ta-20
189 RETURN
190 IF y<9 THEN y=y+1:ta=ta+20
```

```
191 RETURN
192 FOR F=0 TO 9:INK F,0:NEXT F:MODE 0
    :CLS
193 d$="CONGRATULATIONS":textx=64:text
    y=380:GOSUB 155
194 d$="CONGRATULATIONS":textx=64:text
    y=300:GOSUB 155
195 d$="CONGRATULATIONS":textx=64:text
    y=220:GOSUB 155
196 d$="CONGRATULATIONS":textx=64:text
    y=140:GOSUB 155
197 FOR WE=1 TO 2000:GOSUB 140:SOUND 1
    32,WE,1,15:NEXT WE:RETURN
198 IF lev=2 AND x=18 AND y=8 THEN GOS
    UB 215:RETURN
199 IF lev=3 AND x=12 AND y=3 THEN MID
    $(sc$,78,1)="0":MID$(sc$,73,1)="3"
    :y=y+1:SOUND 129,10,-5,15,2,1,1:RE
    TURN
200 IF lev=4 AND x=12 AND y=1 THEN MID
    $(sc$,69,1)="0":MID$(sc$,109,1)="0
    ":SOUND 130,153,-10,15,2,1,15:x=x+
    1:MID$(sc$,32,1)="3":RETURN
201 IF lev=6 AND x=2 AND y=1 THEN SOUN
    D 132,3,-10,15,2,2,2:y=y-1:MID$(sc
    $,23,1)="3":MID$(sc$,86,1)="0":RET
    URN
202 IF lev=6 AND x=17 AND y=5 THEN SOU
    ND 132,3,-10,15,2,2,2:y=y+1:MID$(s
    c$,118,1)="3":MID$(sc$,94,1)="0":R
    ETURN
203 IF lev=7 AND x=9 AND y=5 THEN SOUN
    D 132,3,-10,15,2,2,2:y=y-1:MID$(sc
    $,110,1)="3":MID$(sc$,133,1)="0":R
    ETURN
204 IF lev=8 THEN rn=INT(RND*2):IF rn=
    0 THEN MID$(sc$,138,1)="0" ELSE MI
    D$(sc$,138,1)="3"
205 IF lev=8 AND x=19 AND y=1 THEN x=x
    -2:MID$(sc$,82,1)="0":SOUND 132,10
    ,-10,15,2,2,15:RETURN
206 IF lev=11 AND x=3 AND y=9 THEN SOU
    ND 132,500,-7,7,2,2,1:MID$(sc$,11,
    1)="0":MID$(sc$,22,1)="0":MID$(sc$
    ,42,1)="0":RETURN
```

```
207 IF lev=12 AND x=8 AND y=2 THEN SOU
    ND 132,1,-10,15,2,2:MID$(sc$,127,8
    )="33333333":x=x-1:MID$(sc$,49,1)=
    "3":RETURN
208 IF lev=12 AND x=18 AND y=0 THEN SO
    UND 132,3000,-30,15,2,2,5:GOSUB 21
    7:x=x-1:MID$(sc$,19,1)="3":RETURN
209 IF lev=17 AND x=17 AND y=1 THEN SO
    UND 132,90,-10,15,2,2,5:x=3:y=6:RE
    TURN
210 IF lev=18 AND x=17 AND y=1 THEN SO
    UND 132,10,-10,15,2,2,15:MID$(sc$,
    99,1)="0":MID$(sc$,157,1)="0":RETU
    RN
211 IF lev=18 AND x=10 AND y=0 THEN SO
    UND 132,100,-10,15,2,2,4:MID$(sc$,
    148,1)="0":MID$(sc$,111,1)="0":RET
    URN
212 IF lev=20 AND x=5 AND y=7 THEN SOU
    ND 132,50,-10,15,2,2:MID$(sc$,27,2
    )="00":ali(20)=1:ax=8:ay=1:px=0:py
    =1:x=x+2:RETURN
213 IF lev=20 AND x=9 THEN x=10:MID$(s
    c$,30,1)="3":MID$(sc$,50,1)="3":SO
    UND 132,50,-10,15,2,2:ali(20)=3:ax
    =18:ay=9:RETURN
214 RETURN
215 FOR f=1 TO 200:IF MID$(sc$,f,1)="4
    " THEN MID$(sc$,f,1)="0"
216 NEXT f:SOUND 1,50,350,15,1,2,1:GOS
    UB 179:x=x-1:MID$(sc$,179,1)="3":R
    ETURN
```

```
217 FOR f=1 TO 200:IF MID$(sc$,f,1)="2
    " THEN MID$(sc$,f,1)="4"
218 NEXT f:SOUND 1,200,350,15,1,2,1:GO
    SUB 179:RETURN
219 DATA "33333333333333333333333444433
    333333034443300000533330000354433 3
    03333444333033004330000000005300003
    30033000000033300000000334333333333
    33343303333433333333333343300533444
    444454444433444333333333333333333
    33"
220 DATA "3333333333333333333333000000 0
    000000000003343343343333344344 4334
    33533433333443444334333334443444 43
    44433433333445354443444334335334 33
    33344444443343343343333344344333444
    44445444544444433333333333333333 33
    33"
221 DATA"33333333333333333333334440000 0
    005005044433433333333333333343343
    000300033030003533030300030000003 3
    33333030333333333333303033430000000 5
    00000034334333333333333333334334440
    000000000000444333333333333333333 3
    3"
222 DATA"33333333343333333333433444444 4
    344444444434400000003533330004434 0
    00003330000000004334000003533333333
    33333333333333334444444443340000550 03
    50000004334000033333333333033334444
    44444344444444433333333343333333334
    3"
223 DATA"33333333333333333333333300034444
    44434444444333443444444434445443344
    4344434443444344334443544344434443
    44334443444344434443443344434443444344
    434443443344444434444444434434334544
    44434445444354433333333333333333
    3"
224 DATA"0000000000000000000000434343334
    3343334343443334303434430343434433
    3430343443534343443334303434433343
    3344343430343443444343443434303434
    434443434434343435343443444343443434
    3334344434443434000000000000000000000
    0"
225 DATA"33333333333333333333333344444444
    44444444443340030003003000300043343
    33333333333333343340030055300305030
    0433400405030030553004334333333334
    3333333433400300030030003004334444 4
    44444444444444433333333333333333333
    3"
226 DATA"333333333333333333333303333333
    33330000030303333333333330333033300
    00000000000350003333333333333333330
    33334444444444444300533444444444444
    44443333334444444444444443444334454
    444444454434443333333333333333333333
    3"
227 DATA"00000000000000000000000333300
    00044444000033353300044444400033
    3333330045045040003333040040040040 0
    40003333340400044444440003333333300
    444444400033333300044444440000033
    33000045454540000000000000000000000
    0"
228 DATA"333333333333333333333300444445
    444444000330000000000000005003300
    3003003300300300400330030003
    0033003003003300400300330030030033
    0030030033000005000000000000330002
    00205502002005333333333333333333333
    3"
229 DATA"0000000000200005000033333333 3
    33333333333333333333333333333333200
    32223444432223002000300000000030000
    00000030503000000003000200344432 22
    23454322233333333333333333333333333
    33333333333333322202222225222222222
    2"
230 DATA"3003000053333333300333030333 3
    33252223033300303000330000003033300
    30333333333300033303302222222222200
    33330000000000000003353333333300000
    00033333332222222222222222332222
    52222222252222332222222222222222222
    3"
231 DATA"30033300000000033300300000000 0
    000000000000000000000000000000000300
    00200200200200003300033333333333330
    00330000305000005030000333330300000
    00030333330030300000000303003300 35
    30000000035300330032333333333332300
    3"
232 DATA"33333333333333333333330000004 4
    40000044443300044400044444000033 33
    33333333333333320330022200000022200 0
    00330000022200000222003304333333 33
    33333333330000003000300222003304 00
    00030003000025333333333333333333333
    3"
233 DATA"3000000000000000000003303053003
    50300300303300000000000000000033 03
    03030303030303033300000000000000000
    05330000000000020000003332303030 30
    35303030335000000000000000003303 00
    30030030030030330000000500000000000
    3"
234 DATA"33333333333333333333333000300 00
    00030002003300030002000300000033 00
    03000300020002003300000000350000 02
    00333322233333323335003353000053 00
    00000200330000300200030000003300 00
    30000003000200333333333333333333333
    3"
```



```
235 DATA"000033333333333330000000334444
    4444443300000335444444444453300003
    44443333333444300003444352224444 44
    30000344432444222444300003444433 33
    33344430000335444444444444330000 33
    44444444443300000003333333333330 00
    0"
236 DATA"3305333300333300333303003443 0
    03443003443030034430034430034430 30
    03543003443003443030033330033330 03
    33303000003003443003443030000030 03
    44300344303000003003443003443030 00
    00300344300354333300003003333003 33
    3"
237 DATA"3350440033304440333034304440 4
    34044403430343044404340444034303 34
    03340434033303430343034305300343 03
    53034303430030034303030334033403 33
    03330303044403530444035304040444 03
    03044403030404044003030444030304 04
    0"
238 DATA"3333333333333333333333303030330
    00444444444330030033000433443343 300
    03033333444444443300303003334443 34
    44330300030333444444444330030300 333
    43333334330003030333444444444333 030
    30033344444445333333333333333333 33
    3"
239 DATA 01,0e,a0,21,0a,a0,cd,d1,bc,c9
    ,0,0,0,0,13,a0,c3,1a,a0,53,50,52,4
    9,54,c5,0,cd,19,bd,11,50,0,21,b0,b
    f,dd,46,02,04,19,10,fd,dd,7e,04,07
    ,5f,16,0,19,dd,56,01,dd,5e,00,1a,4
    7,13,1a,4f,13,c5,e5,e5,d5,11,75,a0
    ,3e,00,12,7e,cb,7f,20,05,f5,3e,aa,
    12,f1,cb
240 DATA 77,20,04,1a,f6,55,12,eb,d1,1a
    ,00,e1,00,77,23,13,10,db,e1,01,00,
    08,09,30,04,01,50,c0,09,c1,0d,20,c
    a,c9,00
241 RESTORE 239:FOR f=0 TO 117:READ a$
    :POKE &A000+f,VAL("&"+a$):NEXT f
242 CALL &A000:RETURN
243 RESTORE 244:FOR f=0 TO 527:READ d:
    POKE &A100+f,d:NEXT f:RETURN
244 DATA 4,16,0,0,0,0,0,0,0,0,0,0,0,0,
    0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
    0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
    0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
    0
245 DATA 4,16,0,240,240,0,0,240,255,0,
    0,240,255,0,0,240,255,0,0,240,255,
    0,0,240,240,0,0,48,192,0,0,97,192,
    0,1,97,192,0,1,97,240,0,0,112,120,
    0,0,112,240,0,0,0,48,0,0,0,48,0,0,
    0,48,128,0,0,0,0
246 DATA 4,16,3,15,15,12,7,15,15,14,15
    ,15,15,15,30,195,60,135,60,225,120
    ,195,60,45,75,195,60,45,75,195,30,
    195,60,135,15,15,15,15,15,31,143,1
    5,15,127,239,15,15,207,63,15,15,15
    ,15,15,15,15,15,15,7,7,7,7,2,2,2,2
247 DATA 4,16,240,240,240,240,240,240,
    240,240,240,240,240,240,240,240,24
    0,240,240,208,240,240,240,224,240,
    224,112,96,224,224,96,224,160,224,
    96,208,32,80,64,208,128,208,64,208
    ,96,208,64,128,64,192,64,176,96,16
    0,64,208,64,32,32,128,32,160,240,2
    40,240,240
248 DATA 4,16,255,255,255,255,255,255,
    255,255,255,247,255,247,255,254,25
    5,255,253,255,253,255,255,255,255,
    255,247,255,247,251,255,255,255,25
    5,255,255,255,255,254,254,254,255,
    255,255,255,247,255,255,255,254,25
    5,255,253,255,255,251,255,255,247,
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249 DATA 255,255,255,255
250 DATA 4,16,0,0,7,16,0,0,12,72,0,1,8
    ,32,0,7,14,0,1,45,15,8,3,195,15,12
    ,18,15,15,12,7,15,15,14,7,15,15,14
    ,7,15,15,14,7,15,15,14,7,15,15,14,
    3,15,15,12,3,15,15,12,1,15,15,8,0,
    7,14,0
251 DATA 4,16,0,15,15,0,3,15,15,12,22,
    135,30,134,52,225,120,194,30,45,75
    ,135,15,105,105,15,7,15,15,14,7,15
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    15,15,12,1,255,255,8,0,15,15,0
252 DATA 4,16,0,7,14,0,1,127,239,8,19,
    253,255,140,55,243,255,206,54,255,
    255,206,126,255,255,239,125,255,25
    5,239,127,255,255,239,127,255,255,
    239,127,255,255,235,127,255,255,23
    1,55,255,255,198,55,255,252,206,19
    ,255,251,140,1,127,239,8,0,7,14,0
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Seek and ye shall find

Into adventures with Bill Brock

SOMETIMES it is interesting to sit back and consider what exactly we like to find in our adventure games. Many dedicated (or obsessed?) adventurers maintain that they would prefer more text at the expense of poor graphics; those they switch off anyway. Some revel in intricate puzzles that have to be solved before further movement is possible. Others like the free ranging type of scenario that allows you plenty of scope for movement within many locations.

Some programs have lots of objects to find – but what you do with them can make or mar the game.

Some players prefer what may be termed a fully integrated quest, an adventure with a definite beginning, middle and end with all the puzzles linking logically to the story line. Then we are back again to those who just want to pummel their grey matter with complex manoeuvres, regardless of the plot.

As a compulsive adventure addict over many years I think that the most important single attribute should be the game's logic.

The games I most enjoy playing are those that have a logical story plus puzzles that fit into the plot and can be solved with a reasonable amount of logic.

Almost anyone can conceive of a situation that is almost impossible to solve. To create a problem offering plenty of clues but still difficult to fathom out is much more difficult.

Unrelated and complex puzzles can give you a great feeling of achievement when they are finally beaten, but my goal in an adventure is to be part of it. To sweat out those difficult steps round the dragon, or sigh with relief when I reach that last cache of oxygen bottles on an airless planet.

The best adventure games should be able to transport you away to that alternative reality.

Anything that upsets the flow of belief can destroy that precious atmosphere. Poor vocabularies, inadequate text, silly pictures, illogical movement or events not in keeping with the plot, all will turn what could be a total experience into just another game.

Such superb examples of the adventure writer's art are not so surprisingly few and far between. Fortunately the next rung down on the adventure ladder is fairly well scattered with games that will happily while away the months of waiting for the next big one!

This month sees me trying to catch up on a batch of games most of which have been in the shops for a month or two, but have only just arrived at my distant outpost of civilization – all of 30 miles from London.

My kingdom for a...

TOPOLOGIKA is a software house from Peterborough which has been in the adventure business for some time. Only recently has it had the sense to convert some real classics for the BBC Micro to our friendly Amstrad CPCs and PCWs.

The games are disc only and were originally priced at what we Amstrad users would consider exorbitant. Fortunately Topologika has reduced the price to a more realistic value. Although they are still not cheap (CPC, £9.95. PCW, £14.95), the games are written along classical lines and represent a really good challenge for your money.

All are text only (and plenty of it), and provide a whole string of puzzles for you to get your teeth into. The first to enter my computer was Kingdom of Hamil, classed by Topologika as of medium difficulty.

The plot is simple: You play the part of the rightful heir to the throne who, in your infancy, was abducted and brought up many leagues from Hamil. Over the years you desperately hoped for someone to come and rescue you but no one came.

Now, a fully grown adult, you have escaped from your captors and have returned to claim your kingdom.

The adventure starts with you in a chapel on the outskirts of Hamil. To leave by the way you entered is sudden death. Another exit is sought and found and you are now within striking distance of what you have dreamed of for all those years. All you have to do is prove that you are worthy of your inheritance.

The puzzles are ingenious and I suppose must be accepted as fairly logical. A major problem is to get the parser to understand what you are trying to do. As with many games in the classical mould, the vocabulary is not very large and the way in which you can input commands is strictly limited.

Extensive hints are supplied for those faint hearted enough to require them, but I am pleased to say that they are, on the whole, only hints. You still have to interpret them for them to be useful.

The hint sheet supplied with the game has a list of potential areas of difficulty listed as objects and locations. Each has a number that can be referred to elsewhere. This gives you a number to type into the computer and you will then receive a clue.

You may then ask for another on the same subject and the answers you get will be clearer the longer you persist. Some hints may appear to be quite explicit but you then have to decide how to input this new found knowledge, and that may not be so easy. Kingdom of Hamil does not have



an enormous number of locations but there are plenty of puzzles to solve. Whether you manage it on your own or with the help of the clues provided, you will still feel satisfied when you reach the climax of the adventure. The problems you meet are not in themselves an entirely believable part of the plot but nevertheless provide a stimulating experience in adventuring.

There is no RAM SAVE, but SAVEs to disc are rapid and should be made quite frequently as sudden death is around every corner. The instructions omit reference to any common commands, RESTORE must be used to re-load a SAVEd game position and the adventurer's favourite command EXAMINE is not recognised at all. This seems a strange omission but once you get used to its absence you just read the text more carefully.

This game is not cheap and is dated in its presentation and command structure, but for all that it will give you a fair degree of satisfaction in playing and finally solving all its puzzles.

Space variant

WHEREAS Topologika's Hamil is set in a fantasy world that has everything from a tyranosaurus rex to a bicycle wheel, their Countdown to Doom is pure space science fiction. It was originally written by Peter Kilworth for the BBC Micro and is a true classic in the adventure gaming world. It is text only and only available for the CPC on disc.

Peter Kilworth is the author of How to Write Adventure Games, a must for anyone considering writing his own operating system from square one. It is aimed specifically at the BBC Micro but the ideas presented are applicable to other machines.

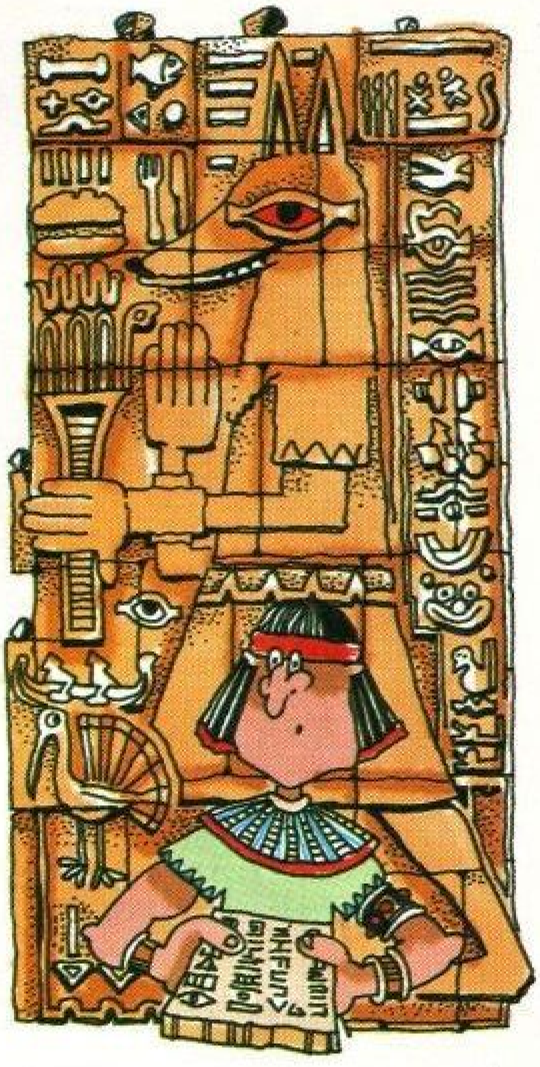
Countdown to Doom places you in a spaceship that has just crashed on the planet Doom – shot down by the automatic planetary defence system. The atmosphere is highly corrosive and if you are unable to repair your ship rapidly you are done for.

Fortunately you are able to find out what spare parts are needed (it tells you in the blurb), so off you go in search of something to do the job. Treasures are also found, and will make you rich – if you survive.

The program is apparently written using a similar operating system to Kingdom of Hamil, so once again we have no EXAMINE and certainly nothing as modern as RAMSAVE. As nasty things can happen round every corner, it is wise to SAVE often.

Help is on tap if you are stuck in exactly the same manner as with Hamil. No specific command instructions are given, but an adventure primer is included to help newcomers to adventures.

Countdown to Doom is full of ingenious puzzles and with its reduced price of £9.95 is well worth having, even if it does take you a little while to get used to a system that has now been superseded by those introduced by Level Nine and Magnetic Scrolls.



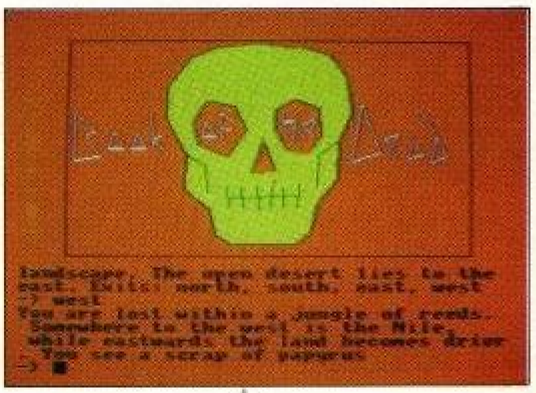
BACK a millennia or so there was a rumpus among the gods of ancient Egypt. The great god Set foully murdered the chief of all the gods, Osiris. The story is well known and the search for the fourteen parts of Osiris' body (Set dismembered it) could well make a good adventure plot some time. For the present we have to make do with CRL's Book of the Dead, which deals with the trials and tribulations of Set's son Kteth.

After the murder, Osiris' son Horus avenged his father, defeated Set and also banished Kteth to the world of mortal man. As Kteth is innocent of any crime he still has many friends among the gods. He learns that the mysterious Book of the Dead will enable him to return to the home of the gods. When Horus, still mad with anger, hears of his quest, he inflicts Kteth with a crippling disease. Kteth will die unless he can get the aid of a friendly god poste haste.

Book of the Dead is a two part adventure written using Incentive's Graphic Adventure Creator and is available for CPC machines on cassette or disc. You play the part of Kteth in his search for survival. The initial problem is staying alive long enough to find someone to lift Horus' curse.

YOU awaken in a busy market square with no possessions and about 50 moves before you die. Mapping the locations is fairly simple and an initial SAVE is worthwhile as RESTOREing a saved game position is quicker than dying and starting from scratch.

Graphics are simple but well implemented, although sometimes the change in colour intensity between adjacent locations is a little



dramatic. The vocabulary does not seem to be very large, so there are times when you may have to search for the right input.

The puzzles vary from easy to moderately difficult and most of the objects found have a fairly obvious use. Travel in town can be severely restricted by the random appearance of some drunken muggers. They will deposit your battered body on the local rubbish dump.

Each time this happens you lose a few valuable moves in returning to where you were. This loss could be crucial, so SAVE on the occasions when you collect the least muggings.

This is a middle of the road adventure with a reasonable story line and could provide hours of playing time. It is not cheap (cassette £9.95) and for this reason will probably be judged harshly in comparison with some budget games on the market.

Reflex action

SLAINE is an action-packed adventure from Martech, with good graphics and a novel form of command control. No typing of instructions is necessary. All your inputs are given using either a joy-stick or five keys on the keyboard. Available on both cassette and disc for the CPC.

The action takes place in Lyonesse, a land that has been under the control of the evil drune





lords. Slaine, a Celtic champion, arrives with his dwarven companion Ukko just after the villagers living near the Tower of Small Sky have killed its drune owner. Your mission is not specified, but moving around will reveal that your main aims appear to be to find certain objects and destroy the evil rogues you meet on your travels.

The game is loosely based on ideas from the comic series 2000 AD and although I have only seen a few of them I think that the atmosphere generated by the game is in keeping with the brash, bombastic blarney portrayed in the comics. Sadly I found the game play very frustrating.

Martech has introduced a new game playing system that is intended to represent the thoughts going through Slaine's mind. These thoughts are shown at the top of the screen and you must move a pointer (a severed hand) to the thought and activate it by pressing the 'fire' button.

There are 10 thoughts flitting backwards and forwards across the top of the screen and co-ordinating the pointer with any one is not at all easy. Coupled with this you find that Slaine's thoughts may not be the ones you wish to implement. Ukko is imploring you to get a move on and Slaine is thinking of something else entirely.

Initiate the wrong action and you find you have begun an unwanted sequence of events. This could be particularly embarrassing if an enraged warrior is approaching with intent to do you bodily harm. Once a fight is started, you have several options such as kick, swing, punch and duck, but the combat sequence is neither believable nor inspiring.

The screen is divided into three main areas: thoughts at the top, a text window below left and a graphics display below right. The graphics window shows such things as your location, what you are carrying, people you meet or things you are examining, all of which is well thought out and presented.

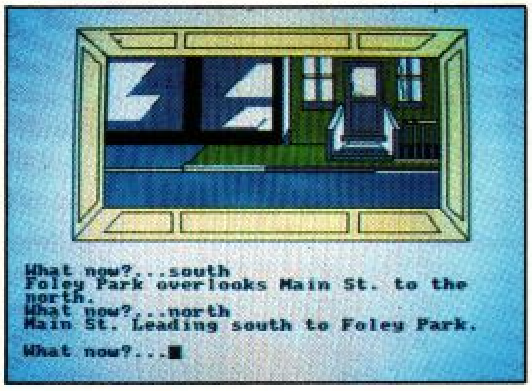
The idea behind Slaine is very good indeed but the game suffers from a clumsy method of control and the number of actions is limited. Some will persevere and get their money's worth but I would rather wait for the improved version I hope Martech will produce in the future.

Be-were...

CHARLES Sharp is not unknown to this column – one of my favourite adventures was his off-beat Wiz-Biz from Alternative Software. His latest is Werewolf Simulator from new software house Top Ten.

You play the part of Tommy Astle, a hack





reporter for the local paper, The Daily Record. There has been a series of bizarre murders involving a lot of blood and some very unusual circumstances. There has even been talk of supernatural causes, and Tommy is at first somewhat cynical of these strange rumours. As his investigations proceed, his cynicism changes to terror.

Are his headaches solely due to a migraine condition? Are the pills he has been prescribed what they say they are? Why does the state of the Moon seem to mean so much more to him recently? And just where is his friend Joe these days?

Doubt and indecision run hand in hand as you guide Tommy through his toughest investigation. Are you on the side of the angels or aiding and abetting the worst kind of psychotic split personality?

Charles has yet to produce a run-of-the-mill adventure and Werewolf Simulator certainly is no exception. It is written using Incentive's Graphic Adventure Creator and has rudimentary, repetitive graphics that are easy on the eye and can be switched off once you have seen them all.

The parser is standard GAC, accepting and recognising simple sentences such as KNOCK ON DOOR and SEARCH UNDER BED. Note the use of SEARCH as well as EXAMINE – use of both may reveal different things.

The plot is novel and gives an interesting twist to the old stories about imports from Transylvania. The adventure takes some time to develop, as you must first master the town's strange layout.

Mapping is not all that simple as many of your movements have completely illogical results. Whether this is to imply a deranged mind at work or just a perverse factor introduced by the writer, I do not know. The end product for me was considerable frustration, and although I liked the idea behind the adventure, I found this loss of directional sense disturbing.

At the budget price of £1.99 (cassette only), Werewolf Simulator will certainly stimulate sales for Top Ten but the frustration factor may limit its climb in the charts.

RATINGS	Kingdom Of Hamil	Book Of The Dead	Slaine	Werewolf Simulator	Countdown To Doom
Plot	69	62	59	63	70
Atmosphere	67	60	65	62	70
Addiction	72	66	62	62	72
Difficulty	68	66	60	65	70
Overall	69	63	62	62	71



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Each label should have its own stringer. If you live close to a software house then it might be wise to write about your local heroes. So readers in Manchester might write about Ocean, those of you in Abingdon should consider Hewson, and anyone in Birmingham might favour US Gold.

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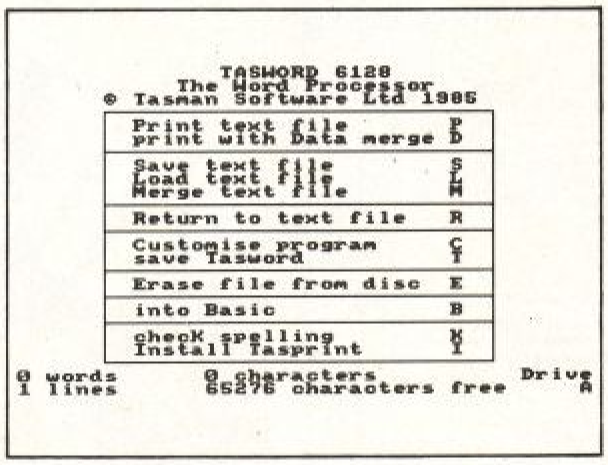
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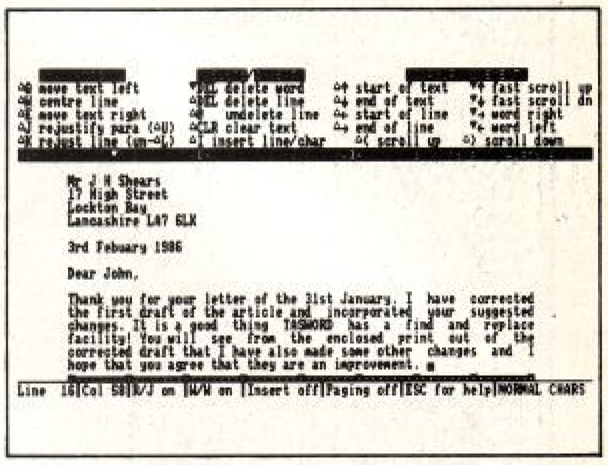
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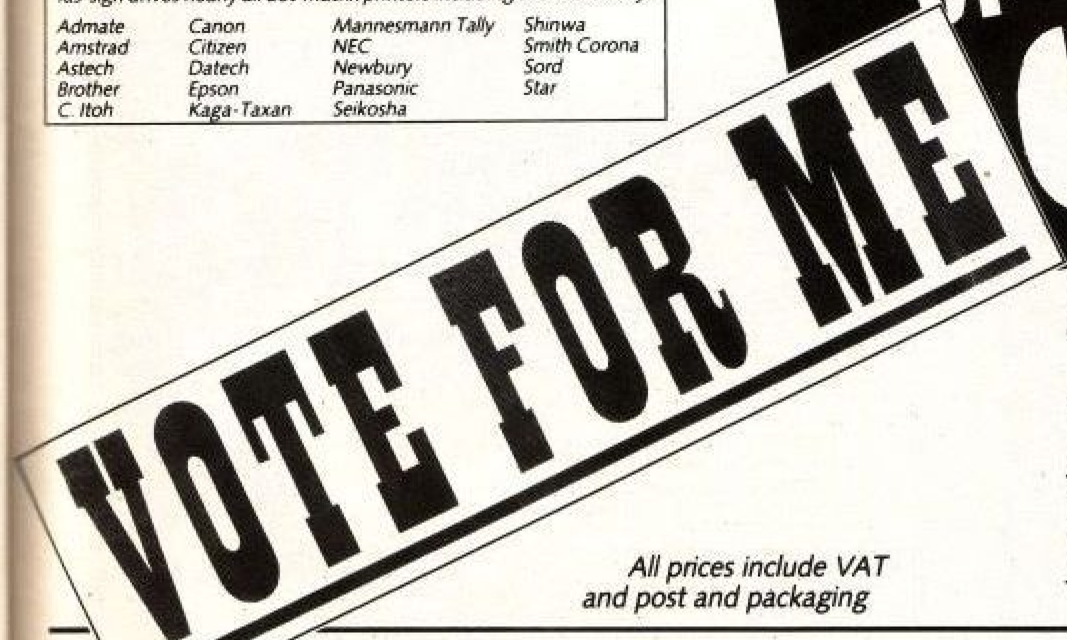
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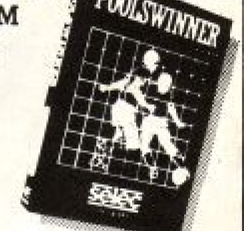
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ENERGY WARRIOR

KEEPING the countryside clean and pretty might not sound much of an excuse for a computer game. But when the countryside in question is the last remaining green and leafy bit on the whole despoiled planet, and there are veritable swarms of homeless aliens just dripping to get at it, you might see that it's not yer average park-keeping commission.

In keeping with the slightly untoward aspects of the job is the executive transport and alien-persuading gear you get along with the peaked cap.

Better even than a Land Rover, the JOS fighter you fly is equipped with lasers and blitz bombs. Lasers are jolly good fun, but the blitz bombs are both deadly to an entire screenful of aliens and limited to 20 per life.

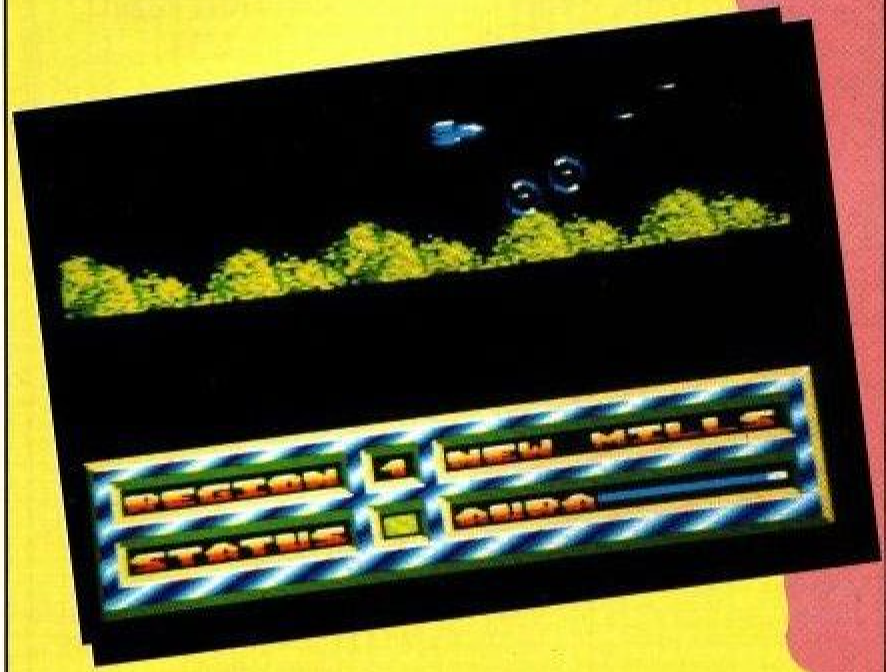
The aliens, by the way, come from what used to be a planet circling Cygnis Alpha when there was a Cygnis Alpha to circle.

But the star went supernova, turned into a rapidly expanding shell of excited gas, neutrinos and even more excited astrophysicists, and took the planets with it.

The aliens want a new home. In fact, they want yours.

Your side-on view shows you flying forwards and backwards





above a simple landscape, with the region you're in, the number of bombs left and general ship-like readings displayed below.

There are three regions to keep clear of xenobiological filth; one forested, one desert and one oceanic. Anyone remember UFO, with those wonderful underwater battles? Tsk. All too young.

Each region has 10 zones. A zone is a self-sustaining area, kept clean of the surrounding degradation by an Aura Energy Generator. If too many aliens infest a zone, then the AEG goes poof and you've failed. Fail three times, and you might as well have stuck to the picnic circuit...

To get between zones, you have to shoot one of the dragon aliens. These are but one of several types of enemy; some travel alone, some in formation and some disguised as dragons. Cunning, eh? There are also mother ships, which take a few shots to dispose of.

When you've shot the dragons (clue – like Defender, the smart bombs are best saved for the biggest and hairiest of the aliens), there appear icons depicting various prizes, like more power, more time, more bombs or exit to another level.

Aliens left alone in one area tend to go berserk. No respecter of the Country Code is Joe Alien. You are therefore advised to share your time equally between all 10 zones in a region.

If you succeed in completely clearing a zone, it will seal off and you can concentrate on the rest. Clear 10 zones and you can switch to the next region.

On the flip side of the cassette comes Molecule Man, a standard wander, bump, die maze game in three dimensions. And a free maze designer. It's been reviewed before, but I wouldn't bother looking it up...

Authors: Binary Design of Mastertronic MAD X
Price : £2.99 (tape only)

Nigel

ENERGY Warrior is Defender without the radar or the men to defend. Landscape scrolls below, fast (and I mean fast) nasties swoop and swirl, you go bammabammabamma.

There's little in the way of plot or frills to enliven the whole procedure. It's one of the more difficult shoot-'em-ups I've played, but there isn't enough going on to really retain my interest.

The various sound effects are confusing, and it's difficult to chart your progress.

And the game follows the unfortunate trend of titchy playing areas, so I really can't see much in it. But it is fast...

13/20

Colin

SIMPLE shoot-em-ups are often the best, but they need to present a challenge you want to take on. Energy Warrior is just dull, lacking the traditional three lives with a bonus every 10,000, lacking a variety of things to shoot.

And the fact that the thing you do want to shoot spends too much time off the edge of the screen makes this frustrating to play.

7/20

Liz

THE MAD X range aims to offer something extra in the form of a previously released game on the B side. Unfortunately this means you get two duff games.

Energy Warrior is the type of game which went out of fashion when vertical scrolling was discovered and I can't see a reason why it should be allowed to creep back into vogue.

8/20

TOUR DE FORCE

GRAND Prix cycling obviously entails a lot more than I was giving the game credit for, if the simulation from Gremlin is to be believed accurate.

The basic idea seems familiar. You attempt to get from A to B on your velocipede before a crowd of sweaty Continentals do likewise. I've seen as much on TV.

But according to Gremlin, the race organisers have picked the most potholed, bumpy, detritus strewn roads in the country on which to hold the race. And, far from concentrating on the game, your opponents are quite happy to push, bump and kick you off the road if they can see some advantage in it.

The game kicks off (ahem) with a pretty picture of a man with a moustache in a helicopter and some bouncy-bouncy music. Ignore these - they play no further part in the game.

Then the road appears. You, and the rest of the bikers, line up on the start, a man with a gun shouts Go! and away you pedal.

No joystick waggling, mind you, just pointing in the right direction is required.

First and foremost you have to steer around the holes, cracks, Road Up signs and other cyclists.

Once you've got the hang of that, you can turn your attention to your body temperature, which rises alarmingly.

By some amazing stroke of pure luck there are items of food and drink hanging around, and you can gain points and lose embarrassing degrees celsius by hitting them.

Other road-bound things include a Judo Warrior (something else I've never seen on the TV coverage of the Tour de France, but it might be true), balls (look, I said it might be true), coins, silicon chips and the odd bird.

Some obstacles can be jumped over by the appropriate use of a ramp. This, and other daring acts on your behalf, can also gain you bonus points.

What do points make? Bicycles! Yes, armed with only five bikes at the start, you can get an extra chopper for every 5,000 points. You lose a machine by falling off or being kicked.

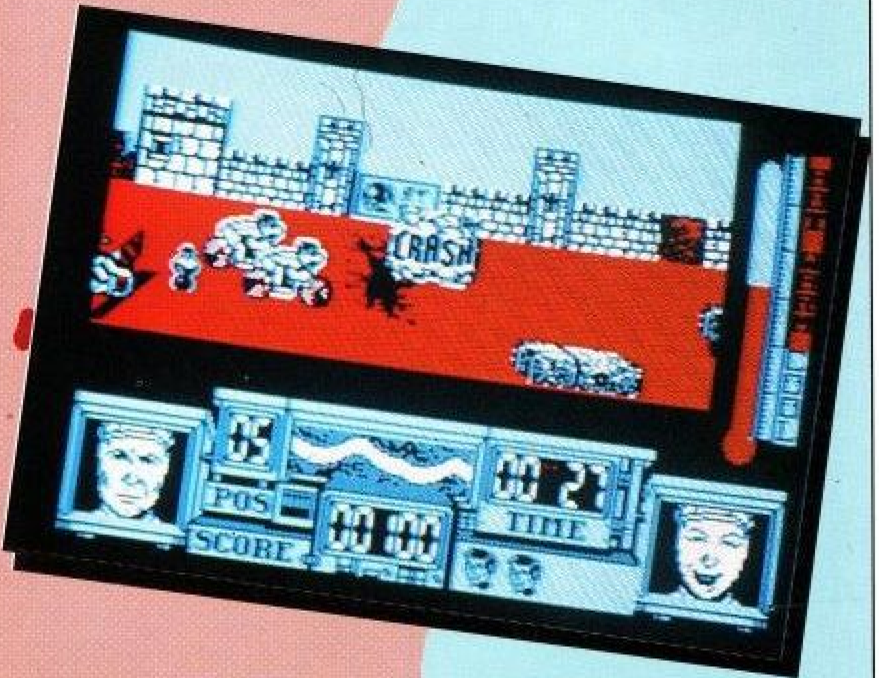
Beneath the play area are the usual displays of score and time. There's also a little map showing you where you are, a position meter and a couple of digitised physogomies which contort as the game goes on.

I haven't been able to establish just what or who these are, but watching them instead of the road is a sure and certain way to enter, a pothole head first.

Just the game if you fancy a yellow jersey, and less messy than juggling with custard.

Author: Gremlin Graphics
Price : £8.95 (tape) £14.95 (disc)





Nigel

AT first, with flash loading screen and convincing music, I was happy that Gremlin had done it again. Now I'm not so sure. This has the unfortunate air of a poor conversion of a Spectrum game, with block coloured graphics and unconvincing animation. There are even a few bugs (spot the half a bicycle that never was a monocycle).

All this wouldn't matter more than a point on the score if the thing was fun, but it isn't. It's not bad for five or ten minutes, but not much more than that.

You move inexorably from left to right, dodging this and picking up that, and aside from the fact that getting to the end reveals a password that might get you a Gremlin Goodies GrabBag there's not a lot more to it than that.

16/20

Colin

CLEAR cartoon style Mode 1 graphics make for an appealing game. I'm not sure about the ethics of kicking rivals, but since this action merits 400 points who cares? The racial stereotyping is distinctly unsound.

The high point of the game is the excellent music. There is a sense of challenge, I wanted to see what the next country looked like, and no doubt if I was a cycling enthusiast I would have persevered. I'm not and I didn't. Tour de Force is merely OK. I've played better and paid less.

15/20

Liz

THE loader suffers from one of my least favourite traits. It pauses to play music. If I wanted music I'd buy Rainbird's Music System.

Once the program has been beaten into submission and actually loaded, the result is disappointing. I'm pleased that Gremlin saw the sense in not making it a joystick waggler, but the game lacks any sense of thrill.

In competition with a number of budget cycling games this fails to get out of second gear.

12/20

SKATE ROCK SIMULATOR

SOMETHING odd here – the game claims to be a skateboarding simulator with "a powerful rock beat to drive you on". Apart from the occasional whimper, my Arnold was silent all through the game. A sprinkling of noise during the starting menus, but other than that... silence.

I'm sure the music wasn't supposed to be the high point of the game anyway, so that leaves the skateboarding aspect for you to get your toes around.

There's this gang of accomplished skaters, called (appealingly) the Slime Rats, and to join them you have to rush down an anonymous bit of suburban Britain, hitting flags and missing cars, OAPs and verges.

If you succeed without losing too many skateboards you can call yourself a Slime Rat Skater. Irresistible, boys and girls, or what?

Towards the rodent status. Your joystick controls it all – one set of movements without the fire button pressed just push the board around the screen, press the fire button and some more spectacular manoeuvres result.

Kick turn left, kick turn right and the old fallback, the wheelie, can all help you leap, twist and gyrate your way around a series of obstacles of increasing difficulty.

There's also the option to tighten up your trucks. No obscure American euphemism this; tighter trucks mean smaller turns, but the rest of the handling (footling?) suffers as a result. Most notably, the acceleration, and as the race is timed (you have to reach the finishing line before the clock runs out) this can make a difference.

You might also prefer a less than megatight turning circle.

As a great deal of the board-bound fun happens on the road, you have to be aware of other road users and give them due consideration (guess who's just passed his driving test – whoopie!).

Cars can ruin any chance you had of becoming a Slime Rat; you might be able to manage the first bit after they hit you but that's about all.

Similarly, ramming pedestrians, falling down holes and trying to get up on the pavement via a six-inch kerb are not the exhibitions of skill that one is expected to display.

However, the appearance of a ramp and an obstacle beyond should not be passed up, as any opportunity to impress can be useful.

Is skateboarding on the way back? Or have urethane wheels and mag alloy trucks gone the way of flares and ZX81 sales? Will you be a Slime Rat Skater, or just a Soggy Hamster Skipping-Rope Jumper? Who can tell...

Author: Bubble Bus for Mastertronic
Price: £1.99





Nigel

IN a game like this, joystick response is all. Remarkably, like in a karate simulation, the simulated skateboarder has to learn the correct sequence of wristflicks and stick juggling.

Sad to report, Skate Rock Simulator doesn't have the right razor sharp response and immediate feedback that would make it an essential purchase, but I suppose it's another scenario and it's cheap enough to be given a go if you enjoy the real thing.

And at least you won't skin your elbows when you fall down laughing at the old lady doing a spot of breakdancing on the pavement. Should that be sidewalk?

15/20

Colin

A DISTINCTLY difficult game. I liked the ability to jump on and off pavements, the wheelies are very effective. The collision detection is somewhat suspect, but not as suspect as some of the "people" on the pavement.

The lack of the titled "rock" is a blessing if the tune between games is any guide, the flip scrolling is awkward, a real scroll at this speed would have been possible and preferable. The price makes up for the shortcomings.

18/20

Liz

SO skateboarding is back. So is Skate Rock, this game was previously published by Bubble Bus. As a veteran of a Santa Cruz with Rebounds and OJ's (she means a skateboard – Ed) I know that tightening the trucks makes for wider turns.

I suppose because I liked the idea I liked the game. It is all skate and no rock. There is the odd glitch which leaves bits of your sprite on the screen. Still Skate Rock provides for an interesting few hours.

17/20

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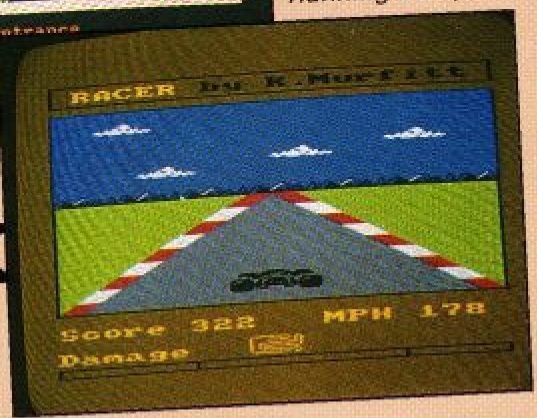
A·C·U A·N·T·H·O·L·O·G·Y

These two exciting compilations bring together the very best games listings which have helped to make *Amstrad Computer User* the best-selling Amstrad magazine in the country. And we've kept the price down to thank you our readers, for all your encouragement and support.

V·O·L·U·M·E 1



Roland Takes a Running Jump



Racer

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V·O·L·U·M·E 2



Space Mania



Splatch

20 GAMES!

Space Mania
This machine-code megaprogram is worth the price of the compilation on its own. There's loads of screens to negotiate in a ladders and platforms extravaganza.

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Think you've seen this one before? Balderdash, we reply. Help the rabbit get to the carrots, and don't forget to drop an acorn on the squirrels. Great frun for all the family.

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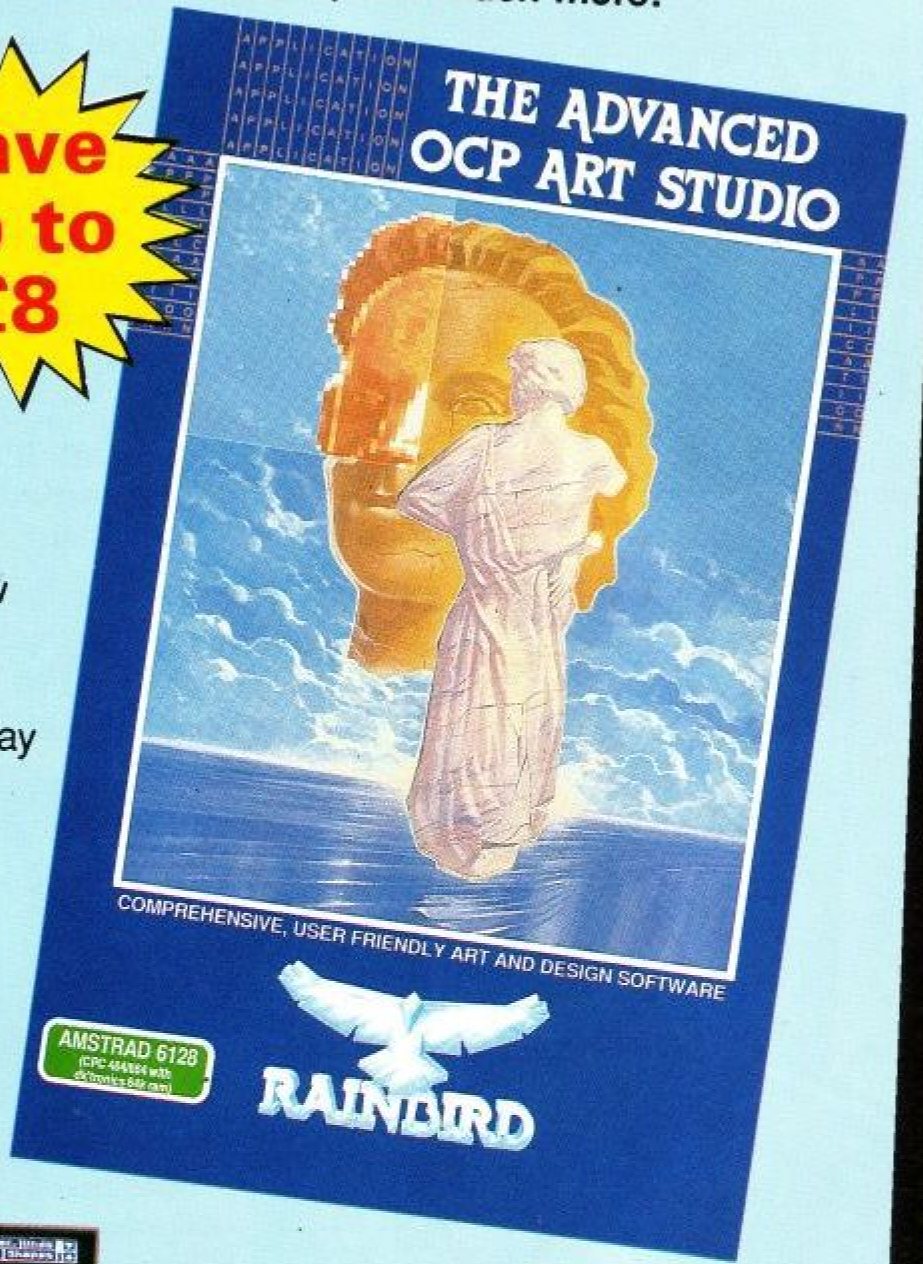
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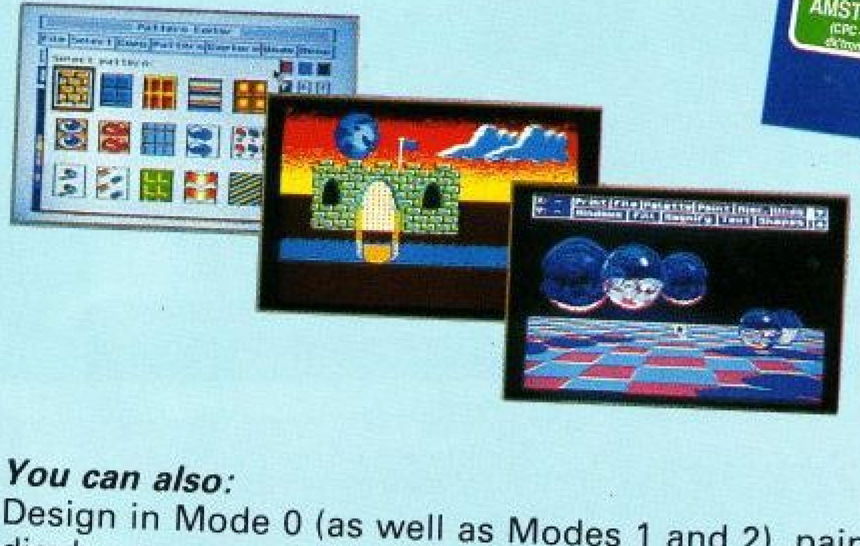
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AMSTRAD
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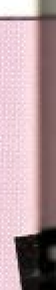
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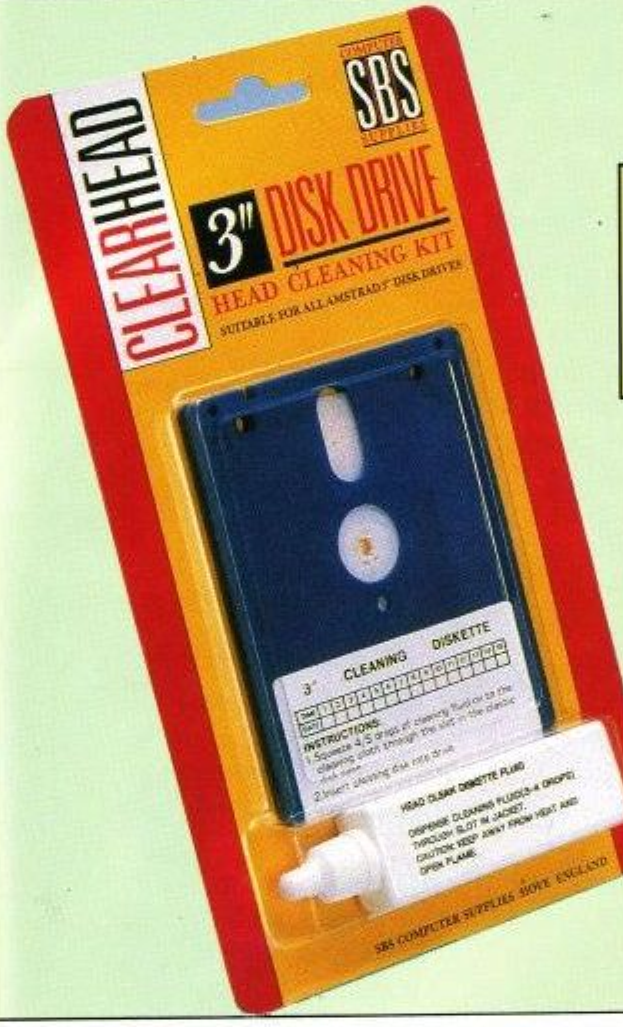
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March: Nemesis preview, Music Machine – the ultimate Sound peripheral. Making the most of Protext, Machine Code manipulation, Elite Disc hack, background print spooler and US Gold interview.
April: Computer Journey – what makes your Arnold tick, the Men from Microprose, Amstrad RS232 reviewed, Sentinel from Firebird, back-up reminder program.
May: Ambug – Build it yourself robot, Empire review, Art Studio from Rainbird. Plumberdroid Lizting, Plan It, the house finance organiser.
June: Ranarama from Hewson, smooth screen scrolling, Head over heels mega map, Maxam II, Motor racing games, Citizen MSP printer, Machine code triangles.
July: Mission Genocide – exclusive preview. Computer Journey II, what makes your discs drive. Amstrad Vs Star wide printers. DK'Tronics battery backed up clock. Hewson interview. Parrotry art package.
August: Starfox preview, CPC through the crystal ball, how to program, Ultramon and Devpac machine code reviews, machine code breakout and Cheetah midi keyboard.
September: Living Daylights (the game of the film), a look at Amster's Cage, the HFP home finance for CP/M+. Looking at roms, how to de-bug programs, plus a look at CPC areas on bulletin boards.
October: Solomon's Key – guide to the ghouls, Protext and Tas-Sign advice. Firebird – who's who and why. Arnor C review. Precision's super fast printer and the Cage Page view from Micronet.
November: Amstrad LQ3500 24 pin printer – Full review. RoDos the disc drive's friend. Gryzor preview. Using masterfile. ACU survey report.
December: Nigel Mansell's Grand Prix previewed, Place Software interviewed. Part one of Jeff Walker's Basic Tutor. Mode Conversion routine, windows from assembler. Reviews of Survivor, Catch 23 and the truly thought provoking Armageddon man.
1988 – January: Trantor – map and play guide, Basic tutor on defined functions, typing tutor listing, Cherry Paint review. 32 line screen mode.
February: Matchday II full review, Kermit comms advice, Driller, Saracen and Jack the Nipper II. Basic On . . . Error. WWII listing. Printer advice and adventure help.
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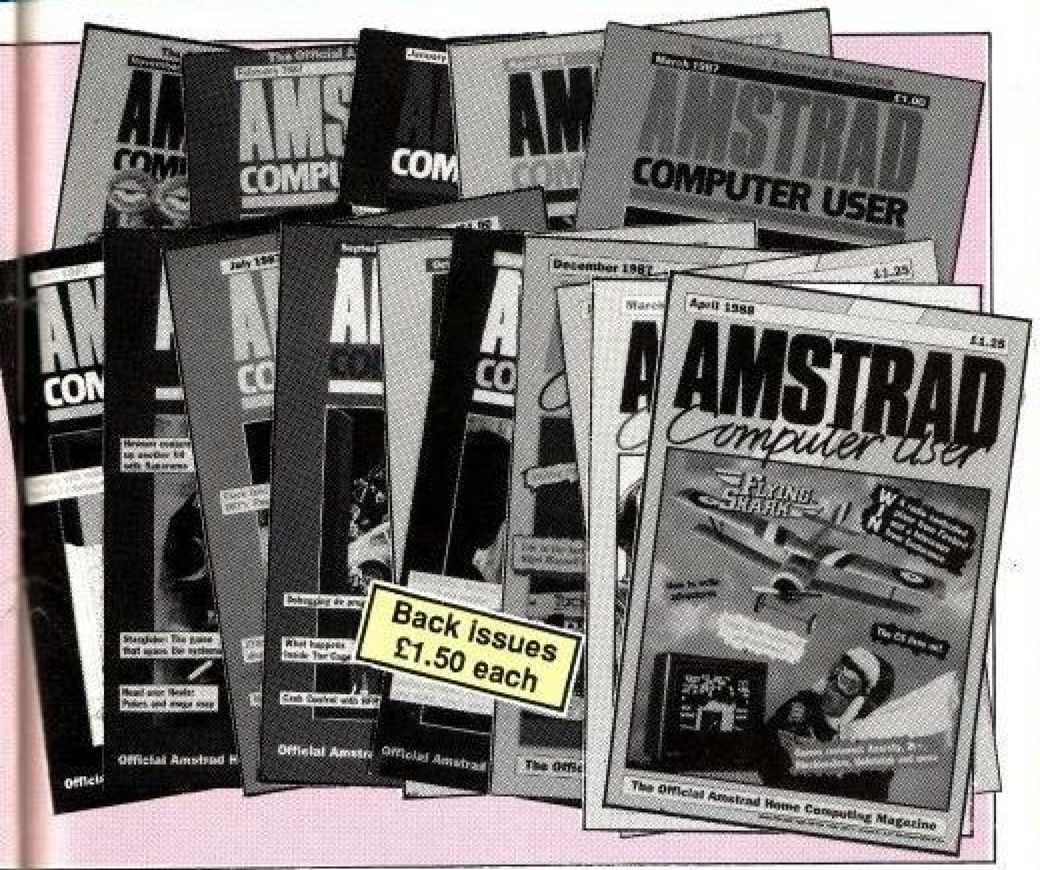


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ACU5

The Least Significant Bit

THREE car games are doing well at the moment. Test Drive (not on the Amstrad yet), Crazy Cars (Amstrad version RSN*) and Out Run. They are all really mediocre driving games, and yet they chart. It's a disgrace that just the presence of a Ferrari should sell a game.

US Gold has sold 250,000 copies of Out Run. By the time you take into account the price of tape and disc duplication they must still make a good £5 on each. I bet the Italian company are cross they aren't getting a royalty on this nice little earner. The sad thing is the game is so poor. You wouldn't buy the real thing without a test drive. Why buy the game?

Freebie of the year

Business lunches are an accepted way of getting on the right side of journalists, but there are times *(Oh such wonderful times – Ed)* when software houses excel themselves. One of these was the MicroProse launch.

Sixteen journalists were taken for a ride. No ordinary ride either. First a trip in a Cessna 172 light airoplane, then a Gazelle helicopter and finally in a Zlin acrobatic stunt plane. Our editor still had his head in the clouds three days later. He claims that you can understand why MicroProse is so hooked on flying, and disappeared to play AcroJet.

Telecomsoft didn't go to quite such outlandish lengths, but has scored points for novelty. Its launch, planned to take place between this magazine going to press and your reading it, has a unique venue – Floor 36 of the Telecom Tower. Calling it the Post Office Tower produces a frosty stare from BT employees. The Telecom Tower do is to announce a new corporate image, with Firebird Silver taking on the name Silverbird.

OK comrade

Mirrorsoft has made a good deal of fuss about Tetris. Note: LSB does not go in for difficult to read backward R's. They've hailed the game written in Russia and converted over here as being a glasnost breakthrough. Well they are about to get a bit of their own back.

Amstrad has clinched a deal with the USSR to sell them 6128s. They, too, will be able to enjoy the benefits of CP/M and its CCCP, sorry CCP. It's good to see Alan Sugar earning a wedge out of the Russians. Almost as good as it is to see IBM being ripped off by the same crowd. It's good to see Amstrad is awakening the Soviets to computer literacy with such a sensible machine. Good, too, that Amstrad needs to keep the production lines turning over making the computer we love.

** Real soon now*

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